Report Number: 208-TRC-03-001

Safety Compliance Testing for FMVSS 208
Occupant Crash Protection

General Motors Corporation

2003 Chevrolet Suburban

NHTSA Number: C30104

TRC Inc. Test Number: 021114

Transportation Research Center Inc.

10820 State Route 347

East Liberty, OH 43319

Report Date: Dec. 19, 2002

Final Report

Prepared For:

U. S. Department of Transportation

National Highway Traffic Safety Administration

Safety Assurance

Office of Vehicle Safety Compliance (NVS-220)

400 Seventh Street, S.W., Room No. 6115

Washington, DC 20590

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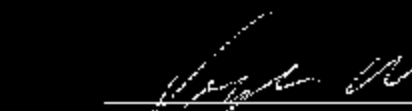
Test Performed By: Mike Postle, Engineering Technician

Report Approved By:



Date 12/16/02

Virginia L. Walters, Project Manager
Transportation Research Center Inc.

Final Report Acceptance By OVSC:

Date

Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Vehicle Safety Compliance

Technical Report Documentation Page

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16. Abstract

Compliance tests were conducted on a 2003 Chevrolet Suburban, NHTSA No. 30104, in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP208-11 for the determination of FMVSS 208 compliance. Possible test failures identified were as follows:

None

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Section 1

Purpose of Compliance Test

PURPOSE

This Federal Motor Vehicle Safety Standard 208 compliance test is part of a program conducted for the National Highway Traffic Safety Administration by Transportation research Center (TRC Inc.) under contract DTNH22-02-D-08062, Task Order VRTC-DCF2525. The purpose of the test was to determine whether the subject vehicle, a 2003 Chevrolet Suburban, NHTSA No. C30104, meets certain performance requirements of FMVSS 208, "Occupant Crash Protection"; indicant FMVSS 212, "Windshield Mounting"; indicant FMVSS 219, "Windshield Zone Intrusion"; and indicant FMVSS 301, "Fuel System Integrity". The compliance test was conducted in accordance with OVSC Laboratory Test Procedure No. TP-208-11 dated August 22, 2002.

Section 2

Tests Performed

TESTS PERFORMED

The following checked items indicate the tests that were performed:

__X__ 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
__X__ 2. Air bag labels (S4.5.1)
__X__ 3. Readiness indicator (S4.5.2)
__X__ 4. Passenger Air Bag Manual Cut-Off Device (S4.5.4)
__X__ 5. Lap belt lockability (S7.1.1.5)
__X__ 6. Seat belt warning system (S7.3)
__X__ 7. Seat belt contact force (S7.4.3)
__X__ 8. Seat belt latch plate access (S7.4.4)
__X__ 9. Seat belt retraction (S7.4.5)
__X__ 10. Seat belt guides and hardware (S7.4.6)
____ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart N)
____ 12. Suppression tests with Newborn infant Subpart K dummy (Part 572, Subpart N)
____ 13. Suppression tests with 3-year-old dummy (Part 572, Subpart P)
____ 14. Suppression tests with 6-year-old dummy (Part 572, Subpart R)
____ 15. Test of Reactivation of the passenger Air Bag system with an Unbelted 5th Percentile female dummy
____ 16. Low risk deployment test with 12-month-old dummy (Part 572, Subpart N)
____ 17. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P)
____ 18. Low risk deployment test with 6-year-old dummy (Part 572, Subpart R)
____ 19. Low risk deployment test with 5th female dummy (Part 572, Subpart O)
__X__ 20. Impact tests

____ Frontal Oblique

- ____ Belted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.1.(a))
- ____ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
- ____ Unbelted 50th male dummy driver and passenger (32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))

____ Frontal 0°

- ____ Belted 50th male dummy driver (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
- ____ Belted 50th male dummy passenger (0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
- ____ Belted 5th female dummy driver (0 to 48 km/h) (S16.1(a))
- ____ Belted 5th female dummy passenger (0 to 48 km/h) (S16.1(a))
- ____ Belted 50th male dummy driver and passenger (0 to 56 km/h)) (S5.1.1(b)(2)
- ____ Unbelted 50th male dummy driver and passenger (0 to 48 km/h) (S5.1.2(a)(1))
- ____ Unbelted 50th male dummy driver (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
- ____ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
- ____ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
- ____ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))

__X__ 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)

____ 21. Sled test: Unbelted 50th male dummy driver and passenger (S13)

____ 22. FMVSS 204 indicant test
__X__ 23. FMVSS 212 test (indicant)
__X__ 24. FMVSS 219 indicant test
__X__ 25. FMVSS 301 frontal test (indicant)

For the crash tests, the vehicle was instrumented with 8 accelerometers. The accelerometer data from the vehicle and dummies were sampled at 12,500 samples per second and processed as specified in SAE J211/1 MAR95 and FMVSS 208, S4.13.

The dynamic tests were recorded using high speed film and digital motion picture cameras.

The vehicle appears to meet the performance requirements to which it was tested.

Section 3

Injury Result Summary

INJURY RESULT SUMMARY FOR CRASH TESTS AND/OR
LOW RISK DEPLOYMENT TESTS

NHTSA No.: C30104 Test Date: 11/14/02

VIN: 3GNEC16Z53G108730

Frontal Crash ____ Offset Crash __X__ Low Risk Deployment ____

Impact Angle: ____0____

Belted Dummies: X Yes ____ No

Speed Range: ___ 32 to 40 km/h __X__ 0 to 40 km/h ___ 0 to 48 km/h ___ 0 to 56 km/h

Test Speed: ___40.0 km/h___

Driver Dummy: __X__ 5th female ____ 50th male

Passenger Dummy: __X__ 5th female ____ 50th male

Test weight: 2684.3 kg

5th Percentile Female Offset Crash Test
Vehicles certified to S16.1(a), S16.1(b), or S18.1

Injury Criteria	Max. Allowable Injury Assessment Values	Driver	Passenger
HIC15	700	262	290
N_{te}	1.0	0.40	0.35
N_{tf}	1.0	0.08	0.28
N_{ce}	1.0	0.02	0.03
N_{cf}	1.0	0.10	0.28
Neck tension	2620 N	782	1059
Neck compression	2520 N	140	55
Chest g	60 g	20.2	22.8
Chest displacement	52 mm	20	13
Left femur	6805 N	3320	1398
Right femur	6805 N	1241	1244

Section 4

Discussion of Test

DISCUSSION OF TEST

The airbags did not deploy in this test. The dummies were restrained with seatbelts.

The useable fuel tank capacity provided by the manufacturer to the Office of Vehicle Safety Compliance (32.5 gallons) did not agree with the fuel tank capacity provided in the owner's manual (31.0 gallons or 117.3 liters). Following instructions from the COTR, the owner's manual stated capacity of 117.3 liters was used in test weight calculations and was used in determining the amount of Stoddard to put into the fuel tank to test at the 94% full level. [TRC Inc. used the method of topping off the fuel (gasoline) for determining the fully loaded weight and then drained all the fuel and filled the fuel tank to 94 percent capacity with Stoddard solvent.]

The vehicle test weight was 15.0 kg above the maximum of the test weight corridor as shown in this report. The test weight had been recalculated on test day, with COTR approval, using Rated Cargo and Luggage Weight (RCLW) of 136 kg instead of the calculated RCLW of 100.5 kg. Thus the test weight was thought to be within the corridor on test day.

The left front and right rear vehicle pre-test attitudes did not fall between the measured attitudes for the delivered and fully loaded conditions. Deviation was 10 mm or less.

The deformable barrier face was attached to an offset rigid load cell barrier designed and owned by NHTSA's Vehicle Research and Test Center. The barrier face was mounted with the specified steel strips and 10 bolts as specified, although the 5 bolts on top and bottom were not evenly spaced.

The rear pit camera (fuel tank view) had no LED's for determination of film speed.

Section 5

Test Data Sheets

DATA SHEET 1
COTR Vehicle Work Order

Vehicle model year, make, and model: 2003 Chevrolet Suburban

NHTSA No.: C30104 Test Date: 11/14/02

COTR signature: Charles R. Case

Tests to be performed for this vehicle are checked below.

_X_ 1. Rear outboard seating position seat belts (S4.1.4.2(b) & (S4.2.4)
_X_ 2. Air bag labels (S4.5.1)
_X_ 3.Readiness indicator (S4.5.2)
_X_ 4. Passenger air bag manual cut-off device (S4.5.4)
_X_ 5. Lap belt lockability (S7.1.1.5)
_X_ 6. Seat belt warning system (S7.3)
_X_ 7. Seat belt contact force (S7.4.3)
_X_ 8. Seat belt latch plate access (S7.4.4)
_X_ 9. Seat belt retraction (S7.4.5)
_X_ 10. Seat belt guides and hardware (S7.4.6)
____ 11. Suppression tests with 12-month-old CRABI dummy (Part 572, Subpart R) using the following indicated child restraints.

Section A
____ Cosco Dream Ride 02-719 ____ Full rearward ____ Mid position ____ Full forward

Section B
____ Britax Handle with Care 191 ____ Full rearward ____ Mid position ____ Full forward
____ Century Assura 4553 ____ Full rearward ____ Mid position ____ Full forward
____ Century Avanta SE 41530 ____ Full rearward ____ Mid position ____ Full forward
____ Century Smart Fit 4543 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Arriva 02727 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Opus 35 02603 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Discovery Adjust Right 212 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo First Choice 204 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo On My Way Position Right V 282 ____ Full rearward ____ Mid position ____ Full forward
____ Graco Infant 8457 ____ Full rearward ____ Mid position ____ Full forward

Section C
____ Britax Roundabout 161 ____ Full rearward ____ Mid position ____ Full forward
____ Century Encore 4612 ____ Full rearward ____ Mid position ____ Full forward
____ Century STE 1000 4416 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Olympian 02803 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Touriva 02519 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Horizon V 425 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Medallion 254 ____ Full rearward ____ Mid position ____ Full forward

____ 12. Suppression tests with 3 year-old dummy (Part 572, Subpart P) using the following indicated child restraints where a child restraint is required.

Section C
____ Britax Roundabout 161 ____ Full rearward ____ Mid position ____ Full forward
____ Century Encore 4612 ____ Full rearward ____ Mid position ____ Full forward
____ Century STE 1000 4416 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Olympian 02803 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Touriva 02519 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Horizon V 425 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Medallion 254 ____ Full rearward ____ Mid position ____ Full forward

Section D
____ Britax Roadster 9004 ____ Full rearward ____ Mid position ____ Full forward
____ Century Next Step 4920 ____ Full rearward ____ Mid position ____ Full forward

Cosco High Back Booster 02-442 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Right Fit 245 ____ Full rearward ____ Mid position ____ Full forward

_____ 13. Suppression tests with Representative 3-year-old child using the following indicated child restraints where a child restraint is required. (Laboratory Test Procedure Appendix H, Data Sheet 16H and 17H)

Section C

____ Britax Roundabout 161 ____ Full rearward ____ Mid position ____ Full forward
____ Century Encore 4612 ____ Full rearward ____ Mid position ____ Full forward
____ Century STE 1000 4416 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Olympian 02803 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco Touriva 02519 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Horizon V 425 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Medallion 254 ____ Full rearward ____ Mid position ____ Full forward

Section D

Britax Roadster 9004 Full rearward Mid position Full forward
____ Century Next Step 4920 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco High Back Booster 02-442 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Right Fit 245 ____ Full rearward ____ Mid position ____ Full forward

_____ 14. Suppression tests with 3-year-old dummy (Part 572, Subpar. P) in the following positions
____ Sitting on seat with back against seat back (S22.2.2.1)
____ Sitting on seat with back against reclined seat back (S22.2.2.2)
____ Sitting on seat with back not against seat back (S22.2.2.3)
____ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
____ Standing on seat, facing forward (S22.2.2.5)
____ Kneeling on seat facing forward (S22.2.2.6)
____ Kneeling on seat facing rearward (S22.2.2.7)
____ Lying on seat (S22.2.2.8)

_____ 15. Suppression tests with representative 3-year-old child in the following positions
____ Sitting on seat with back against seat back (S22.2.2.1)
____ Sitting on seat with back against reclined seat back (S22.2.2.2)
____ Sitting on seat with back not against seat back (S22.2.2.3)
____ Sitting on seat edge, spine vertical, hands by the child's side (S22.2.2.4)
____ Standing on seat, facing forward (S22.2.2.5)
____ Kneeling on seat facing forward (S22.2.2.6)
____ Kneeling on seat facing rearward (S22.2.2.7)
____ Lying on seat (S22.2.2.8)

_____ 16. Suppression tests with 6-year-old dummy (Part 572, Subpart N) using the following indicated child restraints where a child restraint is required.

Section D

Britax Roadster 9004 Full rearward Mid position Full forward
____ Century Next Step 4920 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco High Back Booster 02-442 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Right Fit 245 ____ Full rearward Mid position Full forward

_____ 17. Suppression tests with representative 6-year-old child using the following indicated child restraints where a child restraint is required.

Section D

____ Britax Roadster 9004 ____ Full rearward ____ Mid position ____ Full forward
____ Century Next Step 4920 ____ Full rearward ____ Mid position ____ Full forward
____ Cosco High Back Booster 02-442 ____ Full rearward ____ Mid position ____ Full forward
____ Evenflo Right Fit 245 ____ Full rearward ____ Mid position Full forward

_____ 18. Suppression tests with 6-year-old dummy (Part 572, Subpart N) in the following positions
____ Sitting on seat with back against seat back (S22.2.2.1)
____ Sitting on seat with back against reclined seat back (S22.2.2.2)
____ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
____ Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

___ 19. Suppression tests with representative 6-year-old child in the following positions
___ Sitting on seat with back against seat back (S22.2.2.1)
___ Sitting on seat with back against reclined seat back (S22.2.2.2)
___ Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)
___ Sitting back in the seat and leaning on the right front passenger door (S24.3.3)

___ 20. Low risk deployment test with 12-month-old dummy (Part 572, Subpart R) using the following indicated child restraints.

Section B

___ Britax Handle with Care 191	___ Full rearward	___ Mid position	___ Full forward
___ Century Assura 4553	___ Full rearward	___ Mid position	___ Full forward
___ Century Avanta SE 41530	___ Full rearward	___ Mid position	___ Full forward
___ Century Smart Fit 4543	___ Full rearward	___ Mid position	___ Full forward
___ Cosco Arriva 02727	___ Full rearward	___ Mid position	___ Full forward
___ Cosco Opus 35 02603	___ Full rearward	___ Mid position	___ Full forward
Evenflo Discovery Adjust Right 212	___ Full rearward	___ Mid position	___ Full forward
___ Evenflo First Choice 204	___ Full rearward	___ Mid position	___ Full forward
___ Evenflo On My Way Position Right V 282	___ Full rearward	___ Mid position	___ Full forward
___ Graco Infant 8457	___ Full rearward	___ Mid position	___ Full forward

Section C

___ Britax Roundabout 161	___ Full rearward	___ Mid position	___ Full forward
___ Century Encore 4612	___ Full rearward	___ Mid position	___ Full forward
___ Century STE 1000 4416	___ Full rearward	___ Mid position	___ Full forward
___ Cosco Olympian 02803	___ Full rearward	___ Mid position	___ Full forward
___ Cosco Touriva 07519	___ Full rearward	___ Mid position	___ Full forward
___ Evenflo Horizon V 425	___ Full rearward	___ Mid position	___ Full forward
___ Evenflo Medallion 254	___ Full rearward	___ Mid position	___ Full forward

_____ 21. Test of Reactivation of the Passenger Air Bag System with an Unbelted 5th Percentile Female Dummy (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____

_____ 22. Test of Reactivation of the Passenger Air Bag System with a representative 5th Percentile Female (S20.3, 22.3, S24.3) Perform this test after the following suppression test(s): _____

_____ 23. Low risk deployment test with 3-year-old dummy (Part 572, Subpart P) in the following positions
___ Position 1
___ Position 2

24. Low risk deployment test with 6-year-old dummy (Part 572, Subpart N) in the following positions
___ Position 1
___ Position 2

___ 25. Low risk deployment test with 5th female dummy (Part 572, Subpart O) in the following positions
___ Position 1
___ Position 2

X 26. Impact tests
___ Frontal Oblique Test Speed _____
___ Belted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.1.(a))
___ Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1))
___ Unbelted 50th male dummy driver and passenger ((32 to 40 km/h) (S5.1.2(a)(1) or S5.1.2(b))
___ Frontal 0° Test Speed _____
___ Belted 50th male dummy driver ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
___ Belted 50th male dummy passenger ((0 to 48 km/h) (S5.1.1(b)(1) or S5.1.1(a))
___ Belted 5th female dummy driver ((0 to 48 km/h) (S16.1(a))
___ Belted 5th female dummy passenger ((0 to 48 km/h) (S16.1(a))
___ Belted 50th male dummy driver and passenger ((0 to 56 km/h) (S5.1.1(b)(2)(
___ Unbelted 50th male dummy driver and passenger ((0 to 48 km/h) (S5.1.2(a)(1))

__ Unbelted 50th male dummy driver ((32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
____ Unbelted 50th male dummy passenger (32 to 40 km/h) (S5.1.2(a)(2) or S5.1.2(b))
____ Unbelted 5th female dummy driver (32 to 40 km/h) (S16.1(b))
____ Unbelted 5th female dummy passenger (32 to 40 km/h) (S16.1(b))
__X__ 40% Offset 0° Belted 5th female dummy driver and passenger (0 to 40 km/h) (S18.1)
Test Speed 40 km/h see test procedure for speed tolerance

_____ 27. Sled test: Unbelted 50th male dummy driver and passenger (S13)
_____ 28. FMVSS 204 indicant test
__X__ 29. FMVSS 212 test (indicant)
__X__ 30. FMVSS 219 indicant test
__X__ 31. FMVSS 301 frontal test (indicant)

DATA SHEET 2

REPORT OF VEHICLE CONDITION

CONTRACT NO. DTNH22-D-08062 Date: 11/14/02
FROM: Transportation Research Center, Virginia L. Watters
Lab & rep name
TO: Charles R. Case OVSC, NSA-31
COTR Name
PURPOSE: ( ) Initial Receipt ( ) Received via Transfer (X) Present vehicle condition
MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV
MANUFACTURE DATE: 08/02 NHTSA NO.: C30104 BODY COLOR: Tan
VIN: 3GNEC16Z53G108730 GVWR 3175 GAWR (Fr) 1425 GAWR (Rr) 1814
ODOMETER READINGS: ARRIVAL 70 miles DATE 11/12/02
COMPLETION 70 miles DATE 11/14/02
PURCHASE PRICE: $ N/A DEALER'S NAME: N/A

A. All options listed on "window sticker" are present on the test vehicle.
X Yes ___ No

B. Tires and wheel rims are new and the same as listed.
X Yes ___ No

C. There are no dents or other interior or exterior flaws.
X Yes ___ No

D. The vehicle has been properly prepared and is in running condition.
X Yes ___ No

E. Keyless remote is available and working.
___ Yes X No

F. The glove box contains an owner's manual, warranty document, consumer information, and extra set of keys.
___ Yes X No

G. Proper fuel filler cap is supplied on the test vehicle.
X Yes ___ No

H. Using permanent marker, identify vehicle with NHTSA number and FMVSS test type(s) on roof line above driver door or for school buses, place a placard with NHTSA number inside the windshield and to the exterior front and rear side of bus.
X Yes ___ No

I. Place vehicle in storage area.
X Yes ___ No

J. Inspect the vehicle's interior and exterior, including all windows, seats, doors, etc., To confirm that each system is complete and functional per the manufacturer's specifications. Any damage, misadjustment, or other unusual condition that could influence the test program or test results shall be recorded. Report any abnormal condition to the NHTSA COTR before beginning any test.
___ Vehicle OK X Conditions reported below in comment section

Identify the letter above to which any of the following comments apply.
Comments: Scratch on hood when received. No extra set of keys available.

DATA SHEET 2

REPORT OF VEHICLE CONDITION AT THE COMPLETION OF TESTING

LIST OF FMVSS TESTS PERFORMED BY THIS LAB:
208 plus indicant: 212, 219, 301

MODEL YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV

NHTSA NO. C30104

REMARKS: _____

Equipment that is no longer on the test vehicle as noted on previous page: None

Explanation for equipment removal: The owner's manual was removed to store with project file.

Test Vehicle Condition: In a frontal impact, the vehicle sustained significant front end and unknown structural damage.

RECORDED BY: Don Ledley
DATE: 11/22/02

APPROVED BY: Virginia Watters
DATE: 12/09/02

##########

RELEASE OF TEST VEHICLE

The vehicle described above is released from TRC Inc. to be delivered to _____
(Laboratory) (Laboratory)

Date: _____ Time: _____ Odometer: _____

Lab Representative: _____
Signature Title

Carrier/Customer Representative: _____
Signature Date

DATA SHEET 3
Certification Label and Tire Placard Information

NHTSA No.: C30104 Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): Don Ledley

1. Certification Label
   Manufacturer General Motors Corporation
   Date of Manufacture 08/02
   VIN 3GNEC16Z53G108703
   Vehicle certified as: ____ Passenger car __X__ MPV ____ Truck ____ Bus
   Front axle GVWR 1452 kg/3200 lbs.
   Rear axle GVWR 1814 kg/4000 lbs.
   Total GVWR 3175 kg/7000 lbs.

2. Tire Placard
   ___ N/A – Vehicle is not a passenger car and does not have a tire placard.
   _X_ This is not a passenger car (see the item 1 above), but all or part of this information is still contained on a vehicle label and is reported here.

   Vehicle Capacity Weight N/A[1]
   Designated seating capacity front N/A[1]
   Designated seating capacity rear N/A[1]
   Total Designated seating capacity N/A[1]
   Recommended cold tire inflation pressure front 240 kPa/35 psi
   Recommended cold tire inflation pressure rear 240 kPa/35 psi
   Recommended tire size P265/70R16

[1] Label did not contain this information.

DATA SHEET 4

REAR OUTBOARD SEATING POSITION SEAT BELTS

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): Don Ledley

Do all rear outboard seating positions have type 2 seat belts? Yes X ; No _____

If NO, describe the seat belt installed, the seat location, and any other information about the seat that would explain why a type 2 seat belt was not installed.

REMARKS:

DATA SHEET 5
AIR BAG LABELS (S4.5.1)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

1. Air Bag Maintenance Label and Owner's Manual Instructions: (S4.5.1(a))

1.1 Does the manufacturer recommend periodic maintenance or replacement of the air bag?
___ Yes (Go to 1.2); _X_ No (Go to 2)

1.2 Does the vehicle have a label specifying air bag maintenance or replacement?
___ Yes-Pass; ___ **No-FAIL**

1.3 Does the label contain one of the following?
___ Yes-Pass; ___ **No-FAIL**
Check applicable schedule
___ Schedule on label specifies month and year (Record date ___)
___ Schedule on label specifies vehicle mileage (Record mileage _____)
___ Schedule on label specifies interval measured from date on certification label
(Record interval _____)

1.4 Is the label permanently affixed within the passenger compartment such that it cannot be removed without destroying or defacing the label or the sunvisor?
___ Yes-Pass; ___ **No-FAIL**

1.5 Is the label lettered in English?
___ Yes-Pass; ___ **No-FAIL**

1.6 Is the label in block capitals and numerals?
___ Yes-Pass; ___ **No-FAIL**

1.7 Are the letters and numerals at least 3/32 inches high?
____ height of letters and numerals
___ Yes-Pass; ___ **No-FAIL**

1.8 Does the owner's manual set forth the recommended schedule for maintenance or replacement? ____ Yes-Pass; ____ **No-FAIL**

2. Does the owner's manual: (S4.5.1(f))

2.1 Include a description of the vehicle's air bag system in an easily understandable format?
_X_ Yes-Pass; ___ **No-FAIL**

2.2 Include a statement that the vehicle is equipped with an air bag and a lap/shoulder belt at the front outboard seating positions?
_X_ Yes-Pass; ___ **No-FAIL**

2.3 Include a statement that the air bag is a supplemental restraint at the front outboard seating positions?
_X_ Yes-Pass; ___ **No-FAIL**

2.4 Emphasize that all occupants, including the driver, should always wear their seat belts whether or not an air bag is also provided at their seating positions to minimize the risk of severe injury or death in the event of a crash?
_X_ Yes-Pass; ___ **No-FAIL**

2.5 Provide any necessary precautions regarding the proper positioning of occupants, including children, at seating positions equipped with air bags to ensure maximum safety protection for those occupants?
_X_ Yes-Pass; ___ **No-FAIL**

2.6 Explain that no objects should be placed over or near the air bag on the steering wheel or on the instrument panel, because any such objects could cause harm if the vehicle is in a crash severe enough to cause the air bag to inflate?
_X_ Yes-Pass; ___ **No-FAIL**

2.7 Is the vehicle certified to meet the requirements of S14.5, S15, S17, S19, S21, S23, and S25? (Obtain the answer to this question from the COTR.) (S4.5.1(f)(2))

_X_ Yes (go to 2.7.1); ___ No (go to 3)

2.7.1 Explain the proper functioning of the advanced air bag system? (S4.5.1(f)(2))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.2 Provide a summary of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2))

X Yes-Pass; ___ **No-FAIL**

2.7.3 Present and explain the main components of the advanced passenger air bag system? (S4.5.1(f)(2)(i))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.4 Explain how the components function together as part of the advanced passenger air bag system? (S4.5.1 (f)(2)(ii))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.5 Contain the basic requirements for proper operation, including an explanation of the actions that may affect the proper functioning of the system? (S4.5.1(f)(2)(iii))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.6 Is the vehicle certified to the requirements of S19.2, S21.2 or S23.2?

_X_ Yes, continue with 2.7.6

___ No, go to 2.7.7

2.7.6.1 Contain a complete description of the passenger air bag suppression system installed in the vehicle, including a discussion of any suppression zone? (S4.5.1(f)(2)(iv))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.6.2 Discuss the telltale light, specifying its location in the vehicle and explaining when the light is illuminated?

_X_ Yes-Pass; ___ **No-FAIL**

2.7.7 Explain the interaction of the advanced passenger air bag system with other vehicle components, such as seat belts, seats or other components? (S4.5.1(f)(2)(v))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.8 Summarize the expected outcomes when child restraint systems, children and small teenagers or adults are both properly and improperly positioned in the passenger seat, including cautionary advice against improper placement of child restraint systems? (S4.5.1(f)(2)(vi))

_X_ Yes-Pass; ___ **No-FAIL**

2.7.9 Provide information on how to contact the vehicle manufacturer concerning modifications for persons with disabilities that may affect the advanced air bag system? (S4.5.1(f)(2)(vii))

_X_ Yes-Pass; ___ **No-FAIL**

3. Sun Visor Air Bag Warning Label (S4.5.1 (b))

3.1 Is the vehicle certified to meet the requirements of S19, S21, and S23.? (Obtain the answer to this question from the COTR.) (S4.5.1(b)(2))

_X_ Yes (go to 3.1.1 and skip 3.2; ___ No (go to 3.2, skipping 3.1.1 through 3.1.6)

3.1.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (b)(2))

Driver side _X_ Yes-Pass ___ **No-FAIL**

Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.1.2 Does the label conform in content (**vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children."** (S4.5.1(b)(2)(v))) to the label shown in Figure 8 at each front outboard seating position? (S4.5.1(b)(2))

Driver side _X_ Yes-Pass ___ **No-FAIL**

Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.1.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(2)(i))
Driver side _X_ Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.1.4 Is the message area white with black text? (S4.5.1(b)(2)(ii))
Driver side X Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.1.5 Is the message area at least 30 cm^2? (S4.5.1(b)(2)(ii))
Driver side: Length 12.5 cm , Width 7.8 cm
Passenger side: Length 12.5 cm , Width 7.8 cm
Driver actual message area 97.5 cm^2
Passenger actual message area 97.5 cm^2
Driver side _X_ Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.1.6 Is the pictogram black on a white background? (S4.5.1(b)(2)(iii))
Driver side _X_ Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.1.7 Is the pictogram at least 30 mm (1.2 in) in length? (S4.5.1(b)(2)(iii))
Driver side: Length 32 mm
Passenger side: Length 32 mm
Driver side _X_ Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.2 Vehicles not certified to meet the requirements of S19, S21, and S23.

3.2.1 Is the label permanently affixed (including permanent marking on the visor material or molding into the visor material) to either side of the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing it? (S4.5.1 (b)(1))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.2.2 Does the label conform in content (**vehicles without back seats may omit the statement: "The BACK SEAT is the SAFEST place for children."** (S4.5.1(b)(2)(v))) to the label shown in either Figure 6a or 6b as appropriate at each front outboard seating position? (S4.5.1 (b)(1)).
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.2.3 Is the label heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (b)(1)(i))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.2.4 Is the message area white with black text? (S4.5.1 (b)(1)(ii))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.2.5 Is the message area at least 30 cm^2? (S4.5.1 (b)(1)(ii))
Driver side: Length _____ Width _____
Passenger side: Length _____ Width _____
Actual message area _____ cm^2
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.2.6 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(b)(2)(iii))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.2.7 Is the pictogram at least 30 mm in diameter? (S4.5.1 (b)(2)(iii))
Actual diameter _____ mm
Driver side Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

3.3 Is the same side of the sun visor that contains the air bag warning label free of other information with the exception of the air bag maintenance label and/or the rollover-warning label? (S4.5.1 (b)(3))
Driver side _X_ Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.4 Is the sun visor free of other information about air bags or the need to wear seat belts with the exception of the air bag alert label and/or the rollover-warning label? (S4.5.1 (b)(3))
Driver side _X_ Yes-Pass ___ **No-FAIL**
Passenger side _X_ Yes-Pass ___ **No-FAIL**

3.5 Does the driver side visor contain a rollover-warning label on the same side of the visor as the air bag warning label?
___ Yes (go to 3.5.1; _X_ No (go to 4.1. skipping 3.5.1 through 3.5.)

3.5.1 Are both the rollover-warning label and the air bag warning label surrounded by a continuous solid-lined border?
___ Yes (go to 3.5.2 and skip 3.5.3); ____ No (go to 3.5.3 and skip 3.5.2.)

3.5.2 Is the shortest distance from the border of the rollover label to the border of the air bag warning label at least 1 cm? (575.105 (d)(1)(iv)(B))
_____ actual distance
___ Yes-Pass; ___ **No-FAIL**

3.5.3 Is the shortest distance from any of the lettering or graphics on the rollover-warning label to any of the lettering or graphics of the air bag warning label at least 3 cm? (575.105 (d)(1)(iv)(A)) _____ actual distance
___ Yes-Pass: ___ **No-FAIL**

4. Air Bag Alert Label (A "Rollover Warning Label" or "Rollover Alert Label" may be on the same side of the driver's sun visor as the "Air Bag Alert Label." 575.105(d))

4.1 Is the Sun Visor Warning Label visible when the sun visor is in the stowed position?
Driver side _X_ Yes ___ No **If yes, for driver and passenger go to 5.**
Passenger side ___ No air bag _X_ Yes ___ No

4.2 Is the air bag alert label permanently affixed (including permanent marking on the visor material or molding into the visor material) to the sun visor at each front outboard seating position such that it cannot be removed without destroying or defacing the label or the sun visor? (S4.5.1 (c))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

4.3 Is the air bag alert label visible when the visor is in the stowed position? (S4.5.1(c))
Driver side Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

4.4 Does the label conform in content to the label shown in Figure 6c? (S4.5.1(c))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

4.5 Is the message area black with yellow text? (S4.5.1(c)(1))
Driver side Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

4.6 Is the message area at least 20 cm^2? (S4.5.1(c)(1))
Driver side: Length _____, Width _____
Passenger side: Length _____, Width _____
Actual message area _____ cm^2
Driver side ___ Yes-Pass **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

4.7 Is the pictogram black with a red circle and slash on a white background? (S4.5.1(c)(2))
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

4.8 Is the pictogram at least 20 mm in diameter? (S4.5.1(c)(2))
Driver side: diameter _____ mm
Passenger side: diameter _____ mm
Driver side ___ Yes-Pass ___ **No-FAIL**
Passenger side ___ Yes-Pass ___ **No-FAIL**

5. Label On the Dashboard

5.1 Is the vehicle certified to meet the requirements of S19, S21, and S23? (Obtain the answer to this question from the COTR.) (S4.5.1(e)(2))
_X_ Yes (go to 5.1.1 and skip 5.2 through 5.2.5
___ No (go to 5.2, skipping 5.1.1 through 5.1.6)

5.1.1 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(2))
_X_ Yes-Pass; ___ **No-FAIL**

5.1.2 Is the label clearly visible from all front seating positions? (S4.5.1(e)(2))
X Yes-Pass; ___ **No-FAIL**

5.1.3 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children." (S4.5.1(e)(2)(iii))) to the label shown in Figure 9? (S4.5.1(e)(2))
_X_ Yes-Pass; ___ **No-FAIL**

5.1.4 Is the heading area yellow with black text? (S4.5.1(e)(2)(i)
_X_ Yes-Pass; ___ **No-FAIL**

5.1.5 Is the message white with black text? (S4.5.1(e)(2)(ii))
X Yes-Pass; ___ **No-FAIL**

5.1.6 Is the message area at least 30 cm^2? (S4.5.1(e)(2)(ii))
Length 105 mm. Width 50 mm
Actual message area 52.5 cm^2
_X_ Yes-Pass; ___ **No-FAIL**

5.2 Does the vehicle have a label on the dash or steering wheel hub? (S4.5.1(e)(1))
___ Yes-Pass; ___ **No-FAIL**

5.2.1 Is the label clearly visible from all front seating positions? (S4.5.1(e)(1))
___ Yes-Pass; ___ **No-FAIL**

5.2.2 Does the label conform in content (vehicles without back seats may omit the statement: "The back seat is the safest place for children 12 and under." to the label shown in Figure 7? (S4.5.1 (e)(1)(iii))
___ Yes-Pass; ___ **No-FAIL**

5.2.3 Is the heading area yellow with the word "WARNING" and the alert symbol in black? (S4.5.1 (e)(1)(i)
___ Yes-Pass; ___ **No-FAIL**

5.2.4 Is the message white with black text? (S4.5.1(e)(1)(ii))
___ Yes-Pass; ___ **No-FAIL**

5.2.5 Is the message area at least 30 cm^2? (S4.5.1(e)(1)(ii))
Length _____, Width _____
Actual message area _____ cm^2
___ Yes-Pass; ___ **No-FAIL**

Figure 6a. Sun Visor Label Visible When Visor is in Down Position.

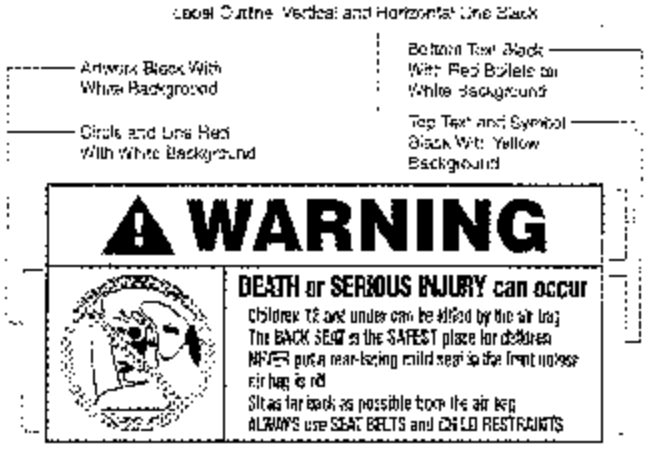


Figure 6b. Sun Visor Label Visible When Visor is in Down Position.

Figure 6c. Sun Visor Label Visible When Visor is in Up Position.

Figure 7. Removable Label on Dash.

Figure 8. Sun Visor Label Visible when Visor is in Down Position.

Figure 9. Removable Label on Dash.

DATA SHEET 6
FMVSS 208 READINESS INDICATOR (S4.5.2)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

An occupant restraint system that deploys in the event of a crash shall have a monitoring system with a readiness indicator. A totally mechanical system is exempt from this requirement. (11/8/94 legal interpretation to Lawrence F. Henneberger on behalf of Breed)

X 1. Is the system totally mechanical? Yes ___; No X
(If YES this Data Sheet is complete.)

X 2. Describe the location of the readiness indicator: Left side of instrument cluster

X 3. Is the readiness indicator clearly visible to the driver?
X Yes-Pass; ___ **No-FAIL**

X 4. Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided on a label or in the owner's manual?
X Yes-Pass; ___ **No-FAIL**

X 5. Does the vehicle have an on-off switch for the passenger air bag?
X Yes (go to 6) ___ No (this form is complete)

X 6. Is the air bag readiness indicator off when the passenger air bag switch is in the off position?
X Yes-Pass; ___ **No-FAIL**

REMARKS:

DATA SHEET 7

Passenger Air Bag Manual Cut-Off Device (S4.5.4)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

_X_ 1. Is the vehicle equipped with an on-off switch that deactivates the air bag installed at the right front outboard seating position?
___ Yes, go to 2
_X_ No, this sheet is complete

___ 2. Does the vehicle have any forward-facing rear designated seating positions? (S4.5.4(a))
___ Yes, go to 3
___ No, go to 4

___ 3. Verification of the lack of room for a child restraint in the rear seat behind the driver's seat. (S4.5.4(b))

3.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
___ N/A – No lumbar adjustment

3.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
___ N/A – No additional support adjustment

___ 3.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
___ N/A – No independent fore-aft seat cushion adjustment

___ 3.4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
___ N/A – No independent seat cushion height adjustment.

___ 3.5. Put the seat in its full rearward position. (S16.2.10.3.1)
___ N/A - the seat does not have a fore-aft adjustment

___ 3.6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
___ N/A – No seat height adjustment

3.7 Draw a horizontal reference line on the side of the seat cushion.

3.8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

3.9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position. (S8.1.2)
___ N/A – The seat does not have fore-aft adjustment.
___ Mid position
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____

_____

3.10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
___ N/A No adjustments

Angle of reference line as tested _____

____ 3.11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

____ N/A – No seat back angle adjustment

Manufacturer's design seat back angle _____

Tested seat back angle _____

____ 3.12 Is the driver seat a bucket seat?

____ Yes, go to 3.12.1 and skip 3.12.2.

No, go to 3.12.2 and skip 3.12.1.

____ 3.12.1 Bucket seats:

____ 3.12.1.1 Locate and mark a vertical Plane B through the longitudinal centerline of the seat driver's seat cushion. (S22.2.1.3) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

Record the width of the seat. _____

Record the distance from the edge of the seat to Plane B. _____

____ 3.12.1.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion behind the driver's seat. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the driver's seat.

_____ mm distance

____ less than 720 mm – Pass

____ more than 720 mm FAIL

Go to 4

____ 3.12.2 Bench seats (including split bench seats):

____ 3.12.2.1 Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.

____ 3.12.2.2 Locate the longitudinal horizontal line in plane B that is tangent to the highest point of the rear seat cushion. Measure along this line from the front of the seat back of the rear seat to the rear of the seat back of the front seat.

_____ mm distance

____ less than 720 mm Pass

____ more than 720 mm – FAIL

Go to 4

4. Does the device turn the air bag on and off using the vehicle's ignition key? (S4.5.4.2)

Yes-Pass; ____ **No-FAIL**

____ 5. Is the on-off device separate from the ignition switch? (S4.5.4.2)

____ Yes-Pass; ____ **No-FAIL**

____ 6. Is there a telltale light that comes on when the passenger air bag is turned off? (S4.5.4.2)

____ Yes-Pass; ____ **No-FAIL**

____ 7. Telltale light (S4.5.4.3)

____ 7.1 Is the light yellow? S4.5.4.3(a))

____ Yes-Pass; ____ **No-FAIL**

7.2 Are the words "PASSENGER AIR BAG OFF" (S4.5.4.3(b))

____ 7.2.1 on the telltale?

____ Yes – Pass, go to 7.3

____ No go to 7.2.2

____ 7.2.2 within 25 mm of the telltale? _____mm from the edge of the telltale light

____ Yes-Pass; ____ **No-FAIL**

___ 7.3 Does the telltale remain illuminated while the air bag is turned off? (S4.5.4.3e)) (Leave the air bag off for 5 minutes.)

___ Yes-Pass; ___ **No-FAIL**

___ 7.4 Is the telltale illuminated while the air bag is turned on? (S4.5.4.3(d))

___ Yes-Pass; ___ **No-FAIL**

___ 7.5 Is the telltale combined with the air bag readiness indicator? (S4.5.3(e))

___ Yes-Pass; ___ **No-FAIL**

8. Owner's manual

___ 8.1 Does the owner's manual contain complete instructions on the operation of the on-off switch? (S4.5.4.4(a))

___ Yes-Pass; ___ **No-FAIL**

___ 8.2 Does the owner's manual contain a statement that the on-off switch should only be used when a member of one of the following risk groups is occupying the right front passenger seating position? (S4.5.4.4(b))

Infants: there is no back seat
the rear seat is too small to accommodate a child restraint
there is a medical condition that must be monitored constantly

Children aged 1 to 12: there is no back seat
space is not always available in the rear seat
there is a medical condition that must be monitored constantly

Medical condition: medical risk causes special risk for passenger
greater risk for harm than with the air bag on

___ Yes-Pass; ___ **No-FAIL**

___ 8.3 Does the owner's manual contain a warning about the safety consequences of using the on-off switch at other times?

Yes-Pass; ___ **No-FAIL**

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center; Third Row Center

X N/A – No retractor is at this position

___ N/A – The retractor is an automatic locking retractor ONLY

___ 1. Record test fore-aft seat position. _____ (S7.1.1.5 (c)(1))
(Any position is acceptable.)

2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
___ Yes-Pass; ___ **No-FAIL**

___ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
___ Yes-Pass; ___ **No-FAIL**

___ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

___ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

___ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
__Yes; __No (If yes, go to 7.1. If no, go to 8.)

___ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
___ Yes-Pass; ___ **No-FAIL**

___ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

___ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B_____ inches

___10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

___11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle _____ . _____ (spec. 5 - 15 degrees)

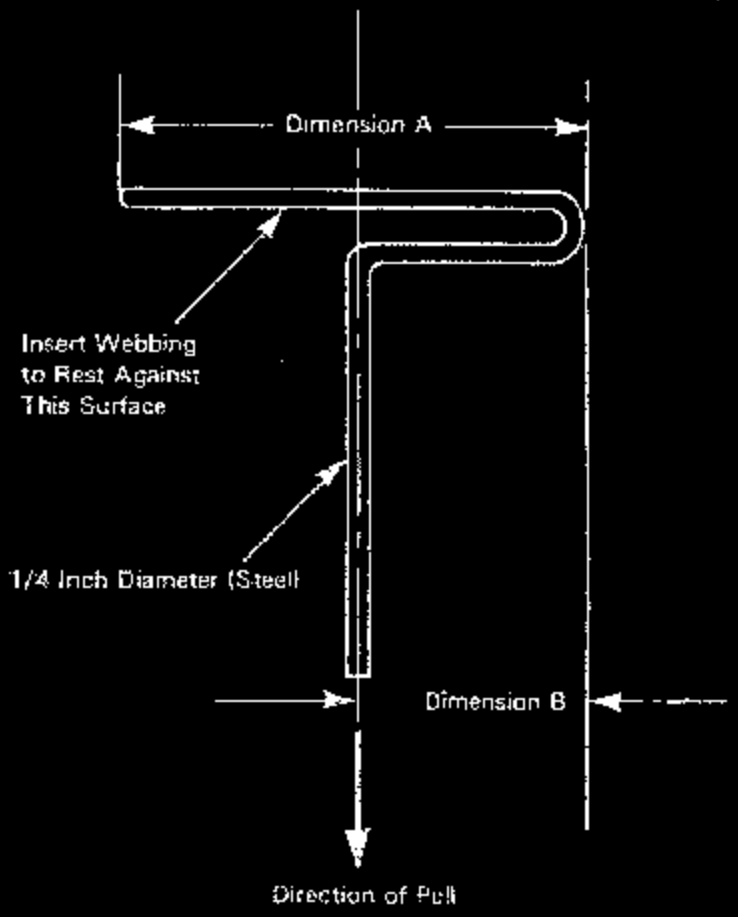
___12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B_____ inches

___13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate _____ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B_____ inches (S7.1.1.5(c)(6))

___14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= _____ inches;
____ Yes-Pass; ___ **No-FAIL**

___15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13=_____ inches;
____ Yes-Pass; ___ **No-FAIL**

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a). **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

___ N/A – No retractor is at this position

___ N/A – The retractor is an automatic locking retractor ONLY

_X_ 1. Record test fore-aft seat position. Mid (S7.1.1.5 (c)(1)) (Any position is acceptable.)

_X_ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

_X_ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

_X_ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

_X_ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
_X_ Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

_X_ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

_X_ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 48.5 inches

X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

_X_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))

Measured force application angle _10°_ (spec. 5 - 15 degrees)

_X_ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))

Measured distance between A and B _12.4_ inches

_X_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate _50_ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))

Measured distance between A and B _12.9_ inches (S7.1.1.5(c)(6))

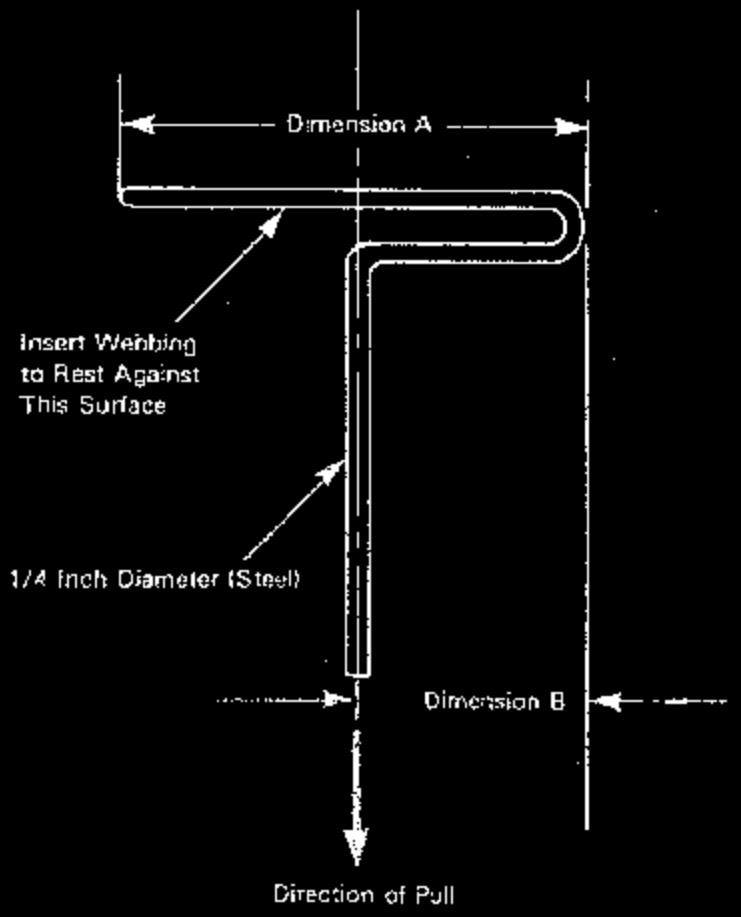
_X_ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= _.5_ inches;

_X_ Yes-Pass; ___ No-FAIL

_X_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= _35.6_ inches;

_X_ Yes-Pass; ___ No-FAIL

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a)), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

___ N/A – No retractor is at this position
___ N/A – The retractor is an automatic locking retractor ONLY

_X_ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1))
(Any position is acceptable.)

_X_ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

_X_ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

_X_ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

_X_ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
_X_ Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

_X_ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

_X_ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 49.8 inches

_X_ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

_X_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))

Measured force application angle 10° (spec. 5 - 15 degrees)

_X_ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))

Measured distance between A and B 27.5 inches

_X_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))

Measured distance between A and B 27.8 inches (S7.1.1.5(c)(6))

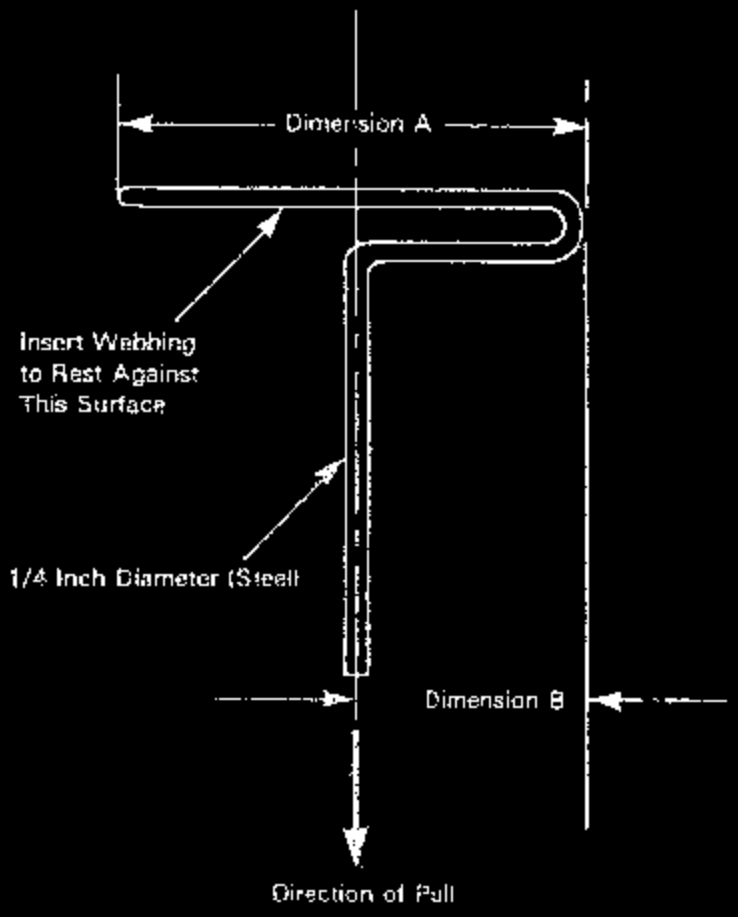
_X_ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.3 inches;

_X_ Yes-Pass; ____ **No-FAIL**

_X_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 22.0 inches;

_X_ Yes-Pass; ____ **No-FAIL**

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

___ N/A – No retractor is at this position
___ N/A – The retractor is an automatic locking retractor ONLY

_X_ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1)) (Any position is acceptable.)

_X_ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

_X_ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

_X_ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

_X_ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
_X_ Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

_X_ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

_X_ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 45.4 inches

_X_ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

_X_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))

Measured force application angle 10° (spec. 5 - 15 degrees)

__X__ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))

Measured distance between A and B 28.5 inches

_X_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))

Measured distance between A and B 28.6 inches (S7.1.1.5(c)(6))

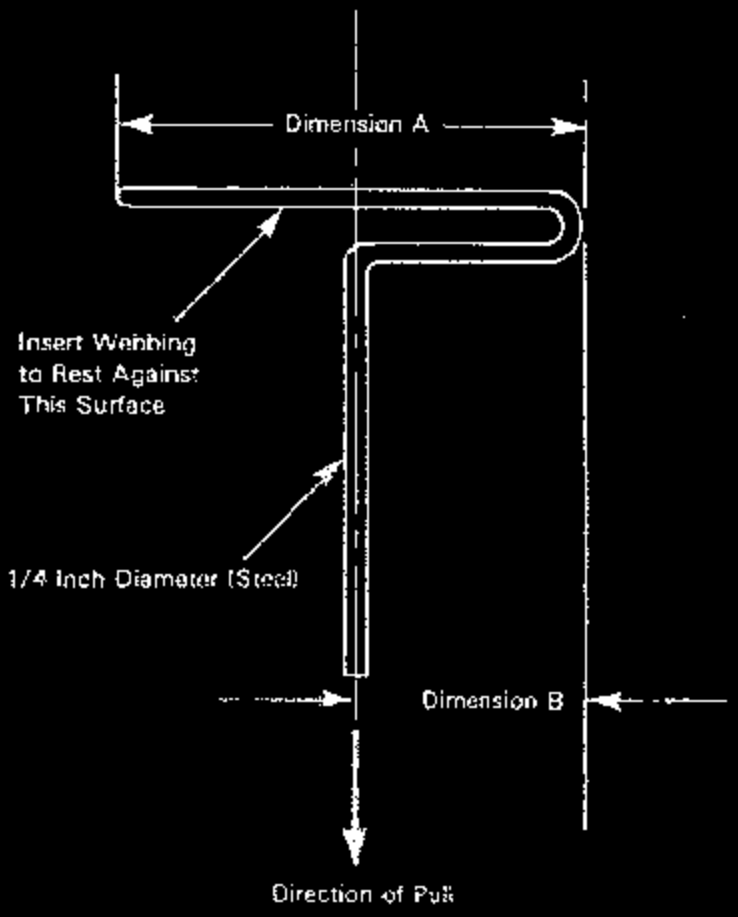
__X__ 14. Subtract the measurement in 12 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.1 inches;

_X_ Yes-Pass; ___ **No-FAIL**

_X_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 16.8 inches;

_X_ Yes-Pass; ___ **No-FAIL**

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

___ N/A – No retractor is at this position

___ N/A – The retractor is an automatic locking retractor ONLY

_X_ 1. Record test fore-aft seat position. Fixed ___ (S7.1.1.5 (c)(1)) (Any position is acceptable.)

X 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

X 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

_X_ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

_X_ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
_X_ Yes; No (If yes, go to 7.1. If no, go to 8.)

_X_ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
_X_ Yes-Pass; **No-FAIL**

_X_ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

X 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 50.0 inches

_X_ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

_X_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)

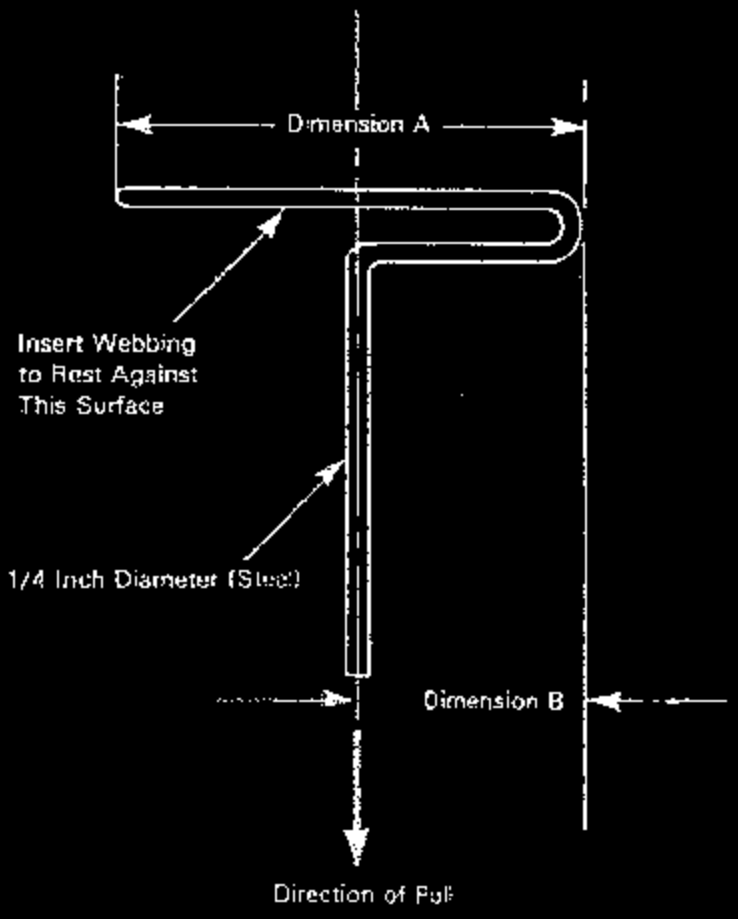
_X_ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 27.0 inches

_X_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 27.2 inches (S7.1.1.5(c)(6))

_X_ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.2 inches;
_X_ Yes-Pass; ___ No-FAIL

_X_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 22.8 inches;
_X_ Yes-Pass; ___ No-FAIL

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a)), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Left

___ N/A – No retractor is at this position

___ N/A – The retractor is an automatic locking retractor ONLY

_X_ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1)) (Any position is acceptable.)

_X_ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))

_X_ Yes-Pass; **No-FAIL**

_X_ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))

_X_ Yes-Pass; ___ **No-FAIL**

_X_ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

_X_ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

_X_ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

_X_ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?

_X_ Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

_X_ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))

X Yes-Pass; **No-FAIL**

_X_ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(3))

_X_ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

Measured distance between A and B 44.0 inches

_X_ 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

_X_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))
Measured force application angle 10° (spec. 5 - 15 degrees)

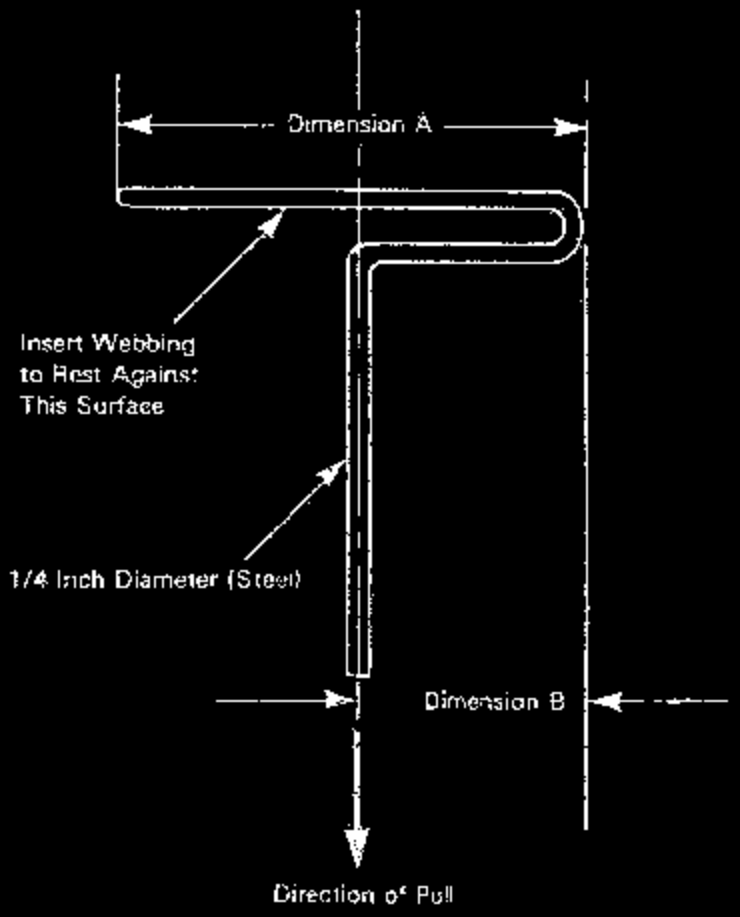
_X_ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))
Measured distance between A and B 15.5 inches

_X_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))
Record onset rate 50 _____ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))
Measured distance between A and B 16.0 inches (S7.1.1.5(c)(6))

_X_ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= 0.5 inches;
_X_ Yes-Pass; ___ No-FAIL

_X_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= 28.0 inches;
_X_ Yes-Pass; ___ No-FAIL

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 8

LAP BELT LOCKABILITY

Passenger cars, trucks, buses, and multipurpose passenger vehicles with a GVWR of 10,000 pounds or less. (S7.1.1.5)

Complete one of these forms for **each** designated seating position that can be adjusted to forward-facing or that is a forward-facing seat, other than the driver's seat (S7.1.1.5(a), **and** that has seat belt retractors that are not solely automatic locking retractors. (S7.1.1.5(c))

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

___ N/A – No retractor is at this position

___ N/A - The retractor is an automatic locking retractor ONLY

_X_ 1. Record test fore-aft seat position. Fixed (S7.1.1.5 (c)(1)) (Any position is acceptable.)

_X_ 2. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT have to be attached by the vehicle user to the seat belt webbing, retractor, or any other part of the vehicle. (S7.1.1.5 (a))
X Yes-Pass; ___ **No-FAIL**

_X_ 3. Does the lap belt portion of the seat belt in the forward-facing seat or seat that can be adjusted to forward-facing consist of a locking device that does NOT require inverting, twisting or deforming of the belt webbing. (S7.1.1.5 (a))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 4. Buckle the seat belt. (S7.1.1.5(c)(1))

_X_ 5. Locate a reference point A on the seat belt buckle. (S7.1.1.5(c)(2))

_X_ 6. Locate a reference point B on the attachment hardware or retractor assembly at the other end of the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))

_X_ 7. Does the vehicle user need to take some action to activate the locking feature on the lap belt portion of the seat belt in any forward-facing seat or seat that can be adjusted to forward-facing?
_X_ Yes; ___ No (If yes, go to 7.1. If no, go to 8.)

_X_ 7.1 Does the vehicle owner's manual include a description in words and/or diagrams describing how to activate the locking feature so that the seat belt assembly can tightly secure a child restraint system and how to deactivate the locking feature to remove the child restraint system. (S7.1.1.5(b))
_X_ Yes-Pass; ___ **No-FAIL**

_X_ 8. Adjust the lap belt or lap belt portion of the seat belt assembly according to any procedures recommended in the vehicle owner's manual to activate any locking feature so that the webbing between points A and B is at the maximum length allowed by the belt system. (S7.1.1.5(c)(2) & S7.1.1.5(c)(1))

_X_ 9. Measure and record the distance between points A and B along the longitudinal centerline of the webbing for the lap belt or lap belt portion of the seat belt assembly. (S7.1.1.5(c)(2))
Measured distance between A and B 4<.2 inches

X 10. Readjust the belt system so that the webbing between points A and B is at any length that is 5 inches or more shorter than the maximum length of the webbing. (S7.1.1.5(c)(3))

_X_ 11. To the lap belt or lap belt portion of the seat belt assembly, apply a preload of 10 pounds using the webbing tension pull device in Figure 5. Apply the load in a vertical plane parallel to the longitudinal axis of the vehicle and passing through the seating reference point of the designated seating position. Apply the preload in a horizontal direction toward the front of the vehicle with a force application angle of not less than 5 degrees nor more than 15 degrees above the horizontal. (S7.1.1.5(c)(4))

Measured force application angle _10°_ (spec. 5 - 15 degrees)

_X_ 12. Measure the length between points A and B along the longitudinal centerline of the webbing while the preload is being applied. (S7.1.1.5(c)(4))

Measured distance between A and B _15.0_ inches

_X_ 13. Increase the load to 50 pounds at a rate of no more than 50 pounds per second. Attain the load in not more than 5 seconds. (If webbing sensitive emergency locking retractors are installed as part of the lap belt or lap belt portion of the seat belt assembly, apply the load at a rate less than the threshold value for lock-up specified by the manufacturer.) Maintain the load for at least 5 seconds. Measure and record the distance between points A and B along the longitudinal centerline of the webbing. (S7.1.1.5(c)(5))

Record onset rate _50_ lb/sec (spec. 10 to 50 lb/sec) (S7.1.1.5(c)(5))

Measured distance between A and B _15.5_ inches (S7.1.1.5(c)(6))

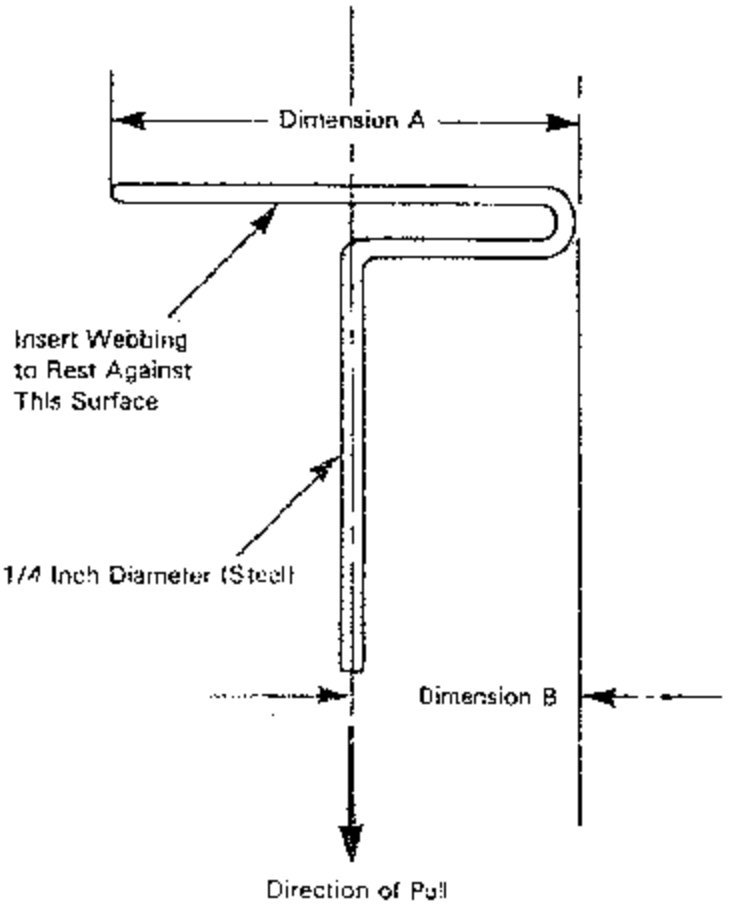
_X_ 14. Subtract the measurement in 13 from the measurement in 12. Is the difference 2 inches or less? (S7.1.1.5(c)(7)) 13-12= _0.5_ inches;

_X_ Yes Pass; ___ **No-FAIL**

_X_ 15. Subtract the measurement in 9 from the measurement in 13. Is the difference 3 inches or more? (S7.1.1.5(c)(8)) 9-13= _28.7_ inches;

X Yes-Pass; **No-FAIL**

REMARKS:



Dimension A - Width of Webbing Plus 1/2 Inch

Dimension B - 1/2 of Dimension A

Figure 5. - Webbing Tension Pull Device

DATA SHEET 9
FMVSS 208 SEAT BELT WARNING SYSTEM CHECK (S7.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

X 1. The occupant is in the driver's seat.
X 2. The seat belt is in the stowed position.
X 3. The key is in the "on" or "start" position.
X 4. The time duration of the audible signal beginning with key "on" or "start" is 5 seconds.
X 5. The occupant is in the driver's seat.
X 6. The seat belt is in the stowed position.
X 7. The key is in the "on" or "start"" position.
X 8. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
X 9. The occupant is in the driver's seat.
X 10. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
X 11. The key is in the "on" or "start" position.
X 12. The time duration of the audible signal beginning with key "on" or "start" is 0 seconds.
X 13. The occupant is in the driver's seat.
X 14. The seat belt is in the latched position and with at least 4 inches of belt webbing extended.
X 15. The key is in the "on" or "start" position.
X 16. The time duration of the warning light beginning with key "on" or "start" is 7 seconds.
X 17. Complete the following table with the data from 4, 8, 12 and 16 to determine which option is used

		Warning light	Warning light specification	Audible signal	Audible signal specification*
S7.3 (a)(1)	Belt latched & Key on or start	Item 16 7	0 seconds*	Item 12 0	0 seconds**
	Belt stowed & Key on or start	Item 8 7	60 seconds minimum	Item 4 5	4 to 8 seconds
S7.3 (a)(2)	Belt latched & Key on or start	Item 16 7	4 to 8 seconds	Item 12 0	0 seconds**
	Belt stowed & Key on or start	Item 8 7	4 to 8 seconds	Item 4 5	4 to 8 seconds

* 49 USCS @ 30124 does NOT allow an audible signal to operate for more than 8 seconds.
** 0 seconds means the light or audible signal are NOT permitted to operate under these conditions. See 7/12/00 interpretation to Patrick Raher of Hogan and Hartson

_X_ 18. The seat belt warning system meets the requirements of (manufacturers may comply with either section)

____ S7.3 (a)(1)

_X_ S7.3 (a)(2)

____ **FAIL** - Does NOT meet the requirements of either option

_X_ 19. Note wording of visual warning: (S7.3(a)(1) and S7.3(a)(2))

_____ Fasten Seat Belts

_____ Fasten Belts

_X_ Symbol 101

_____ **FAIL** – Does not use any of the above wording or symbol

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Left

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A – No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
___ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
___ N/A – No seat height adjustment

_X_ 8 Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
_X_ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Center of 8 ½ inch travel length

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
___ N/A – No adjustments
Reference line angle as tested 0°

X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

___ N/A – No adjustments

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.5°

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force 0.65 lb.

X 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A – No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A - No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
___ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A – No seat height adjustment

_X_ 8. Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
_X_ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Middle notch (12th of 23 notches)

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
_X_ N/A – No adjustments
Reference line angle as tested 0°

X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

___ N/A - No adjustments

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.5°

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force 0.60 lb.

X 0.0 to 0.7 pounds - Pass

greater than 0.7 pounds - FAIL

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Front Row Center & Third Row Center are not Type 2

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

___ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
___ No (continue with this check sheet)

2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
___ N/A – No lumbar adjustment

___ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
___ N/A - No additional support adjustment

___ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
___ N/A – No independent fore-aft seat cushion adjustment

___ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
___ N/A – No independent seat cushion height adjustment.

___ 6 Put the seat in its full rearward position. (S16.2.10.3.1)
___ N/A - the seat does not have a fore-aft adjustment

___ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
___ N/A – No seat height adjustment

___ 8 Draw a horizontal reference line on the side of the seat cushion.

___ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

___ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
___ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: _____

___ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
___ N/A – No adjustments
Reference line angle as tested _____

___ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

___ N/A No adjustments

Manufacturer's design seat back angle _____

Tested seat back angle _____

___ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

___ 14. Fasten the seat belt latch.

___ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

___ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force _____ lb.

___ 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A – No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
X N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A – No seat height adjustment

_X_ 8 Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
_X_ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
___ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
_X_ N/A – No adjustments
Reference line angle as tested

X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

X N/A – No adjustments

Manufacturer's design seat back angle _____

Tested seat back angle _____

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force 0.60 lb.

X 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A – No lumbar adjustment

X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

X 6. Put the seat in its full rearward position. (S16.2.10.3.1)
_X_ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A – No seat height adjustment

_X_ 8. Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
_X_ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
_X_ N/A – No adjustments
Reference line angle as tested _____

X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

X N/A – No adjustments

Manufacturer's design seat back angle _____

Tested seat back angle _____

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force 0.60 lb.

X 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A – No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
_X_ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A – No seat height adjustment

_X_ 8 Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
_X_ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
___ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
_X_ N/A – No adjustments
Reference line angle as tested ___

X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

X N/A No adjustments

Manufacturer's design seat back angle _____.

Tested seat back angle _____.

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force 0.59 lb.

X 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): Third Row Left

DESIGNATED SEATING POSITION: R. Benavides

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A – No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A - No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
_X_ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A No seat height adjustment

_X_ 8 Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
_X_ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
___ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
_X_ N/A – No adjustments
Reference line angle as tested _____

_X_ 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

_X_ N/A – No adjustments

Manufacturer's design seat back angle _____

Tested seat back angle _____

_X_ 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

_X_ 14. Fasten the seat belt latch.

_X_ 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

_X_ 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force _0.59_ lb.

_X_ 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 10
BELT CONTACT FORCE (S7.4.3)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

Test all Type 2 seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Does the vehicle incorporate a webbing tension-relieving device?
___ Yes (this form is complete)
_X_ No (continue with this check sheet)

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A - No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position. (S16.2.10.3.1)
_X_ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A – No seat height adjustment

_X_ 8 Draw a horizontal reference line on the side of the seat cushion.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
_X_ N/A - The seat does not have a fore-aft adjustment.

_X_ 10. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the middle fore-aft position for this test. (S8.1.2)
___ Mid position. If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Fixed

_X_ 11. If seat adjustments other than fore-aft are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2.1)
_X_ N/A - No adjustments
Reference line angle as tested

X 12. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

X N/A – No adjustments

Manufacturer's design seat back angle _____

Tested seat back angle _____

X 13. Position the test dummies according to dummy position placement instructions in Appendix B and include the positioning check sheets.

X 14. Fasten the seat belt latch.

X 15. Pull either 12 inches of belt webbing or the maximum available amount of belt webbing, whichever is less, from the retractor and then release it, allowing the belt webbing to return to the dummy's chest.

X 16. Locate the point where the centerline of the upper torso belt webbing crosses the midsagittal line on the dummy's chest. At that point pull the belt webbing out 3 inches from the dummy's chest and release until it is within one inch from the dummy's chest. (S10.8) Using a force measuring gage with a full scale range of no more than 1.5 pounds, measure the contact force perpendicular to the dummy's chest exerted by the belt webbing.

Contact force 0.59 lb.

X 0.0 to 0.7 pounds - Pass

___ **greater than 0.7 pounds - FAIL**

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
_X_ N/A - No lumbar adjustment

_X_ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 5. Put the seat in its full rearward position. (S16.2.10.3.1)
___ N/A - the seat does not have a fore-aft adjustment

_X_ 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
___ N/A – No seat height adjustment

_X_ 7 Draw a horizontal reference line on the side of the seat cushion

_X_ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)

_X_ 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
___ N/A – No adjustments
Reference line angle as tested 0°

X 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

___ N/A – No seat back angle adjustment

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.5°

X 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.

X 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.

X 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.

X 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.

X 16. Place the latch plate in the stowed position.

X 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?

X Yes-Pass; ___ **No**

X 18 Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?

X Yes-Pass; ___ **No**

X 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?

X Yes-Pass; ___ **No-FAIL**

X 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?

X Yes-Pass; ___ **No-FAIL**

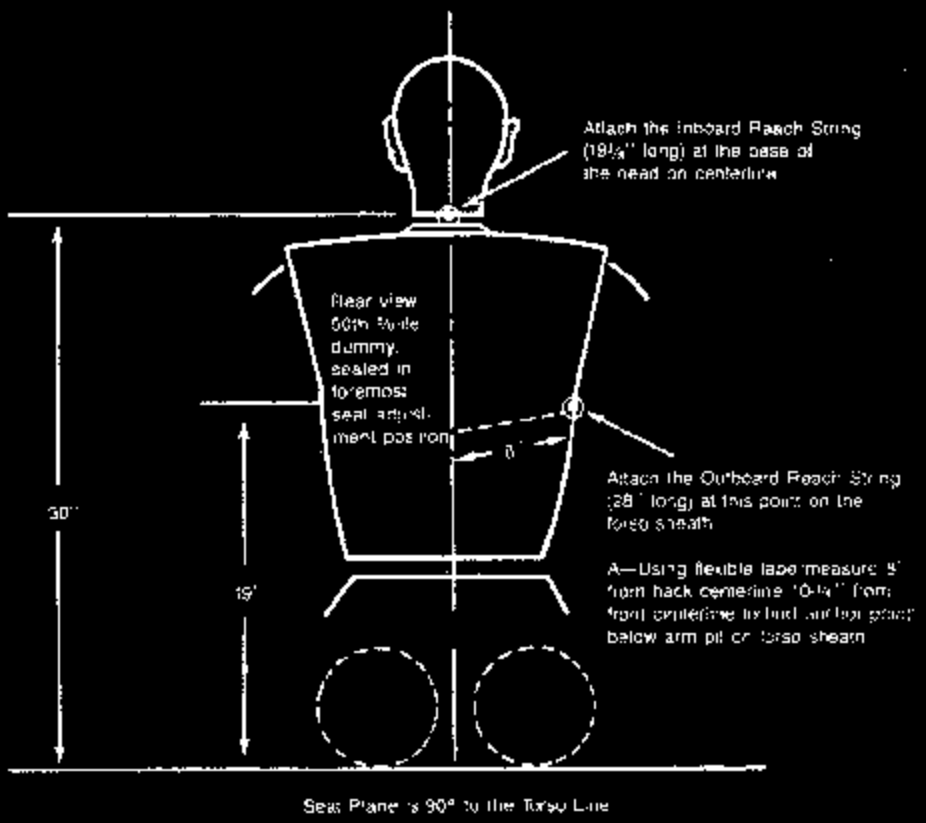


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

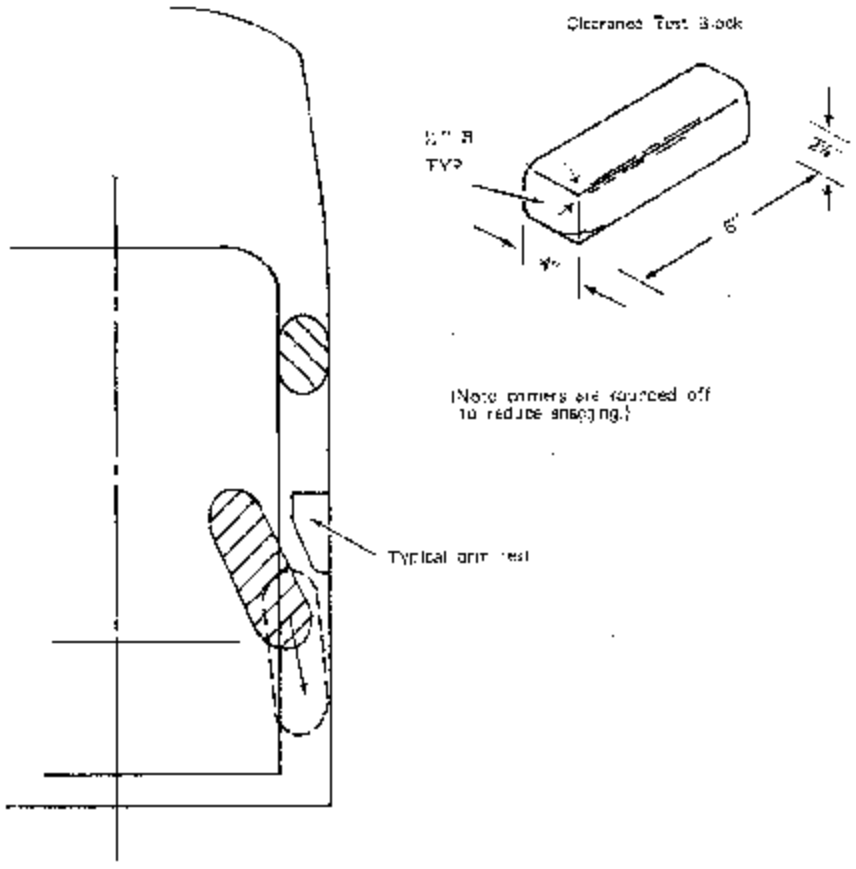


Figure 4—USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 11
LATCHPLATE ACCESS (S7.4.4)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

Test all front outboard seat belts other than those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (8.1.3)
_X_ N/A No lumbar adjustment

_X_ 2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 4. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 5. Put the seat in its full rearward position. (S16.2.10.3.1)
___ N/A - the seat does not have a fore-aft adjustment

_X_ 6. If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
_X_ N/A – No seat height adjustment

_X_ 7 Draw a horizontal reference line on the side of the seat cushion

_X_ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

_X_ 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the full rearward position and then place the seat in the forwardmost fore-aft position for this test. (S10.7)

_X_ 10. If seat adjustments, other than fore-aft, are present and the horizontal reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal.
_X_ N/A – No adjustments
Reference line angle as tested 0°

_X_ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S4.5.4.1 (b) and S8.1.3)

___ N/A – No seat back angle adjustment

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.5°

_X_ 12. Position the test dummy using the procedures in Appendix A. (Some modifications to the positioning procedure may need to be made because the seat is in its forward most position. Note on the Appendix A positioning check sheet any deviations necessary to position the Part 572, Subpart E dummy.) Include the positioning check sheet with this form.

_X_ 13. Position the adjustable seat belt anchorage in the manufacturer's nominal design position for a 50th percentile adult male occupant.

_X_ 14. Attach the inboard reach string to the base of the head following the instructions on Figure 3.

_X_ 15. Attach the outboard reach string to the torso sheath following the instructions on Figure 3.

_X_ 16. Place the latch plate in the stowed position.

_X_ 17. Extend inboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?

_X_ Yes-Pass; ___ **No**

_X_ 18. Extend outboard reach string in front of the dummy and then backward and outboard to the latch plate to generate an arc of the reach envelope of the test dummy's arms. Is the latch plate within the reach envelope?

_X_ Yes-Pass; ___ **No**

_X_ 19. Is the latch plate within the inboard (item 17) or outboard (item 18) reach envelope?

_X_ Yes-Pass; ___ **No-FAIL**

_X_ 20. Using the clearance test block, specified in Figure 4, is there sufficient clearance between the vehicle seat and the side of vehicle interior to allow the test block to move unhindered to the latch plate or buckle?

_X_ Yes-Pass; **No-FAIL**

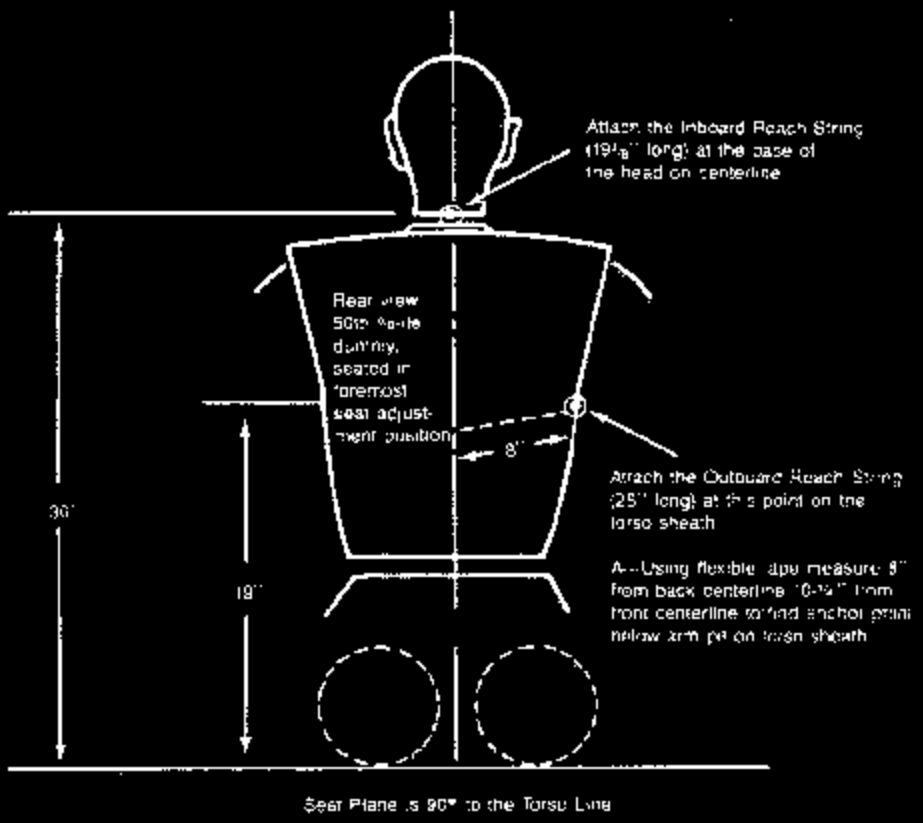


Figure 3. Location of Anchoring Points for Latchplate Reach Limiting Chains or Strings to Test for Latchplate Accessibility Using Subpart E Test Device

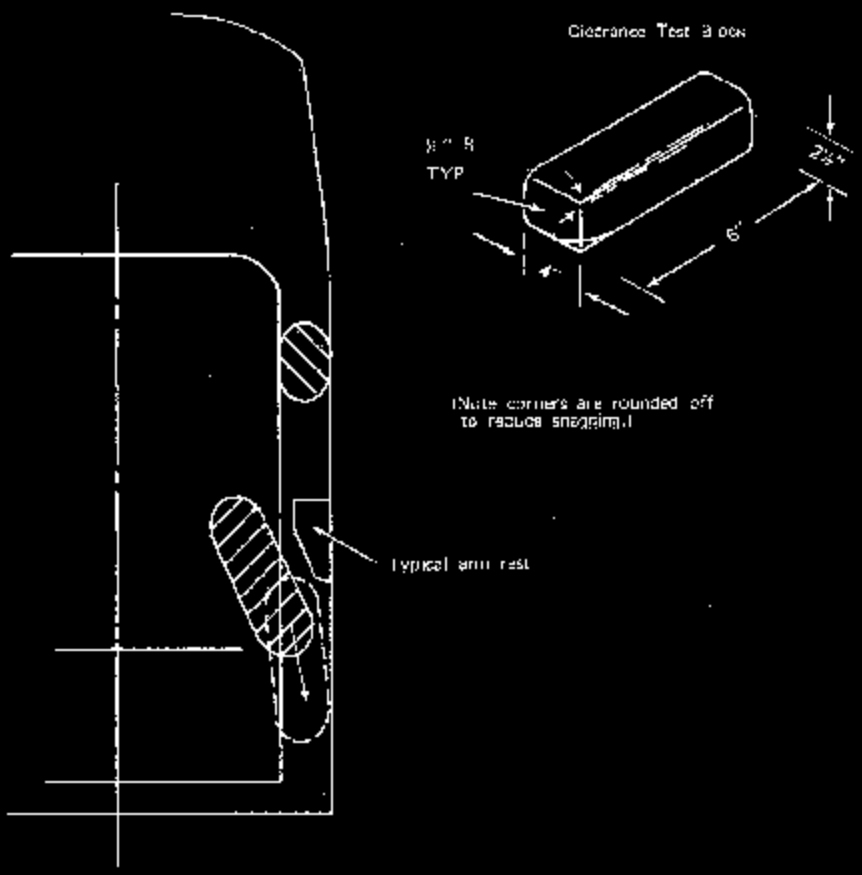


Figure 4 - USE OF CLEARANCE TEST BLOCK TO DETERMINE HAND/ARM ACCESS

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: ITRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

GVWR: 3175 kg/7000 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

X 1. Is the vehicle a passenger car or walk-in van-type vehicle?
___ Yes, this form is complete
X No

X 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
X N/A – No lumbar adjustment

X 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A – No additional support adjustment

X 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position.) (S16.2.10.3.1)
X N/A – No independent fore-aft seat cushion adjustment

X 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A – No independent seat cushion height adjustment.

X 6. Put the seat in its full rearward position.
X N/A - the seat does not have a fore-aft adjustment

X 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
___ N/A – No seat height adjustment

X 7 Draw a horizontal line on the side of the seat cushion.

X 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Center of 8 ½ inch travel length

X 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
N/A – No seat adjustments
Reference angle as tested 0°

_X_ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)

___ N/A – No seat back angle adjustment

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.5°

_X_ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.

_X_ N/A – No head restraint adjustment

_X_ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)

_X_ N/A – No adjustable upper seat belt anchorage

Manufacturer's specified anchorage position. _____

Tested anchorage position _____

_X_ 14. Is the driver seat a bucket seat?

_X_ Yes, go to 14.1 and skip 14.2.

___ No, go to 14.2 and skip 14.1.

_X_ 14.1 Bucket seats:

Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

Record the width of the seat. 560 mm

Record the distance from the edge of the seat to Plane B. 280 mm

___ 14.2 Bench seats (including split bench seats):

___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.

___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.

Distance from the vehicle centerline to the center of the steering wheel _____

Distance from the vehicle centerline to Plane B _____

_X_ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)

_X_ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)

_X_ 17. Rest the thighs on the seat cushion.

_X_ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)

_X_ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

_X_ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

_X_ pelvic angle (20° to 25°)

_X_ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

_X_ pelvic angle (20° to 25°) (S10.4.2.2)

_X_ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.

_X_ measured distance (10.6 inches) (S10.5)

_X_ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.

_X_ 21. Fasten the seat belt around the dummy.

_X_ 22. Remove all slack from the lap belt portion. (S10.9)

___ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)

_X_ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)

_3_ pound load applied

X 25. Is the belt system equipped with a tension relieving device?

___ Yes, continue

_X_ No, go to 26

___ 25.1 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9).

_X_ 26. Check the statement that applies to this test vehicle:

X 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. _X_ Pass

_X_ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. _X_ Pass

___ 26.3 Neither A or B apply. ____ **FAIL**

_X_ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?

_X_ Yes-Pass; ___ **No-FAIL**

X 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?

___ N/A

_X_ Yes-Pass; ___ **No-FAIL**

DATA SHEET 12
SEAT BELT RETRACTION (S7.4.5)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

GVWR: 3175 kg/7000 lbs.

Test all front outboard seat belts, except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Is the vehicle a passenger car or walk-in van-type vehicle?
___ Yes, this form is complete
_X_ No

_X_ 2. Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S8.1.3)
_X_ N/A – No lumbar adjustment

_X_ 3. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
_X_ N/A – No additional support adjustment

_X_ 4. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position.) (S16.2.10.3.1)
_X_ N/A – No independent fore-aft seat cushion adjustment

_X_ 5. If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
_X_ N/A – No independent seat cushion height adjustment.

_X_ 6. Put the seat in its full rearward position.
___ N/A - the seat does not have a fore-aft adjustment

_X_ 7. If the seat height is adjustable, put it in the full down position. (S8.1.2)
_X_ N/A – No seat height adjustment

_X_ 7 Draw a horizontal line on the side of the seat cushion.

_X_ 8. Using only the controls that change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid position (if there is no mid position, label the closest adjustment position to the rear of the mid-point), and R for full rearward.
___ N/A - The seat does not have a fore-aft adjustment.

X 9. Using only the controls that change the seat in the fore-aft direction, place the seat in the middle fore-aft position. (S8.1.2)
If there is no mid position, put the seat in the closest adjustment position to the rear of the midpoint. Describe the location of the seat: Middle notch (12th of 23 positions)

_X_ 10. If seat adjustments, other than fore-aft, are present and the reference line is no longer horizontal, use those adjustments to maintain the reference line as closely as possible to the horizontal. (S16.2.10.3.2)
_X_ N/A – No seat adjustments
Reference angle as tested 0°

_X_ 11. The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S8.1.3)

___ N/A – No seat back angle adjustment

Manufacturer's design seat back angle 15.5°

Tested seat back angle 15.5°

_X_ 12. If adjustable, set the head restraint at the full up and full forward position. (S8.1.3) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.

_X_ N/A – No head restraint adjustment

_X_ 13. Place any adjustable seat belt anchorages at the vehicle manufacturer's nominal design position for a 50th percentile adult male occupant (S8.1.3)

_X_ N/A No adjustable upper seat belt anchorage

Manufacturer's specified anchorage position. _____

Tested anchorage position _____

X 14. Is the driver seat a bucket seat?

_X_ Yes, go to 14.1 and skip 14.2.

___ No, go to 14.2 and skip 14.1.

_X_ 14.1 Bucket seats:

Locate and mark a vertical Plane B through the longitudinal centerline of the seat. The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

Record the width of the seat. 560 mm

Record the distance from the edge of the seat to Plane B. 280 mm

14.2 Bench seats (including split bench seats):

___ Driver seat: Locate and mark a vertical Plane B through the center of the steering wheel parallel to the vehicle longitudinal centerline.

___ Passenger seat: Locate and mark a vertical longitudinal Plane B on the seat that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel.

Distance from the vehicle centerline to the center of the steering wheel _____

Distance from the vehicle centerline to Plane B _____

_X_ 15. Stow outboard armrests that are capable of being stowed. (S7.4.5)

_X_ 16. Remove the arms of a Subpart E dummy and place it in the seat such that the midsagittal plane is coincident with Plane B and the upper torso rests against the seat back. (S10.4.1.1 & S10.4.1.2)

_X_ 17. Rest the thighs on the seat cushion.

_X_ 18. Position the H-point of the dummy within 0.5 inch of the vertical dimension and 0.5 inch of the horizontal dimension of a point 0.25 inch below the H-point determined by using the equipment and procedures specified in SAE J826 (APR 1980). (S10.4.2.1) Then measure the pelvic angle with respect to the horizontal using the pelvic angle gage. Adjust the dummy position until these three measurements are within the specifications. (S10.4.2.1 and S10.4.2.2)

_X_ horizontal inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

_X_ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

_X_ pelvic angle (20° to 25°)

_X_ vertical inches from the point 0.25 below the determined H-point (0.5 inch max.) (S10.4.2.1)

_X_ pelvic angle (20° to 25°) (S10.4.2.2)

_X_ 19. Set the distance between the outboard knee clevis flange surfaces at 10.6 inches.

___ measured distance (10.6 inches) (S10.5)

_X_ 20. To the extent practicable keep the thighs and the legs in a vertical plane (S10.5) and rest the thighs on the seat cushion while resting the feet on the floorpan or toe board.

_X_ 21. Fasten the seat belt around the dummy.

_X_ 22. Remove all slack from the lap belt portion. (S10.9)

_X_ 23. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this four times. (S10.9)

_X_ 24. Apply a 2 to 4 pound tension load to the lap belt. (S10.9)

_3_ pound load applied

_X_ 25. Is the belt system equipped with a tension relieving device?

___ Yes, continue

_X_ No, go to 26

___ 25.1 Introduce the maximum amount of slack into the upper torso bet that is recommended by the vehicle manufacturer in the vehicle owner's manual. (S10.9). Go to 25.

_X_ 26. Check the statement that applies to this test vehicle:

_X_ 26.1 The torso and lap belt webbing of the seat belt system automatically retracts to a stowed position when the adjacent vehicle door is in an open position and the seat belt latch plate is released. _X_ Pass

X_ 26.2 The torso and lap belt webbing of the seat belt system automatically retracts when the seat belt latch plate is released. _X_ Pass

___ 26.3 Neither A or B apply. ___ **FAIL**

X_ 27. With the webbing and hardware in the stowed position are the webbing and hardware prevented from being pinched when the door is closed?

_X_ Yes-Pass; ___ **No-FAIL**

_X_ 28. If this test vehicle has an open body (without doors) and has a belt system with a tension-relieving device, does the belt system fully retract when the tension-relieving device is deactivated?

___ N/A

_X_ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Left Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
X No; go to 2

X 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
X No; go to 3

X 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
X No; go to 4

X 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
X No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Center Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
_X_ No; got to 2

_X_ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; got to 3

_X_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; got to 4

_X_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
_X_ No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass: ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
Yes-Pass; ___ **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Right Front

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
_X_ No; go to 2

_X_ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; go to 3

_X_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; go to 4

_X_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
_X_ No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Left

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
_X_ No; go to 2

_X_ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; go to 3

_X_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; go to 4

_X_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
_X_ No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Center

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
X No; got to 2

X 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
X No; got to 3

X 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
X No; got to 4

X 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
X No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Second Row Right

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

_X_ 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
_X_ No; go to 2

_X_ 2. Is the seat removable? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; go to 3

_X_ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
_X_ No; go to 4

_X_ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
_X_ No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
Yes-Pass: ___ **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Left

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
X No; got to 2

X 2. Is the seat removable? (S7.4.6.1(b))
X Yes; this form is complete
No; got to 3

3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
___ No; got to 4

___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
___ No: this form is complete.

5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Center

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
X No; got to 2

X 2. Is the seat removable? (S7.4.6.1(b))
X Yes; this form is complete
___ No; got to 3

___ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
___ No; got to 4

___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
___ No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass: ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 13
SEAT BELT GUIDES AND HARDWARE (S7.4.6)

NHTSA No.: C30104 Test Date: 11/12/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides

DESIGNATED SEATING POSITION: Third Row Right

Test seat belts except those in walk-in van-type vehicles and those at front outboard designated seating positions in passenger cars. Complete a form for each applicable seat belt.

X 1. Is the seat cushion movable so that the seat back serves a function other than seating? (S7.4.6.1 (b))
___ Yes; this form is complete
X No; go to 2

X 2. Is the seat removable? (S7.4.6.1(b))
X Yes: this form is complete
___ No; go to 3

___ 3. Is the seat movable so that the space formerly occupied by the seat can be used for a secondary function? (S7.4.6.1(b))
___ Yes; this form is complete
___ No; go to 4

___ 4. Is the webbing designed to pass through the seat cushion or between the seat cushion and seat back? (S7.4.6.1(a))
___ Yes: go to 5.
___ No: this form is complete.

___ 5. Does one of the following three parts, the seat belt latch plate, the buckle, or the seat belt webbing, stay on top of or above the seat cushion under normal conditions (i.e., conditions other than when belt hardware is intentionally pushed behind the seat by a vehicle occupant)? (S7.4.6.1(a))
___ Yes-Pass; ___ **No-FAIL**
Identify the part(s) on top or above the seat.
___ seat belt latch plate; ___ buckle; ___ seat belt webbing

___ 6. Are the remaining two seat belt parts accessible under normal conditions?
___ Yes-Pass; ___ **No-FAIL**

___ 7. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the belt is completely retracted or, if the belt is nonretractable, the belt is unlatched. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 8. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat is moved to any position to which it is designed to be adjusted. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 9. The buckle and latch plate do not pass through the guides or conduits provided and fall behind the seat when the seat back, if foldable, is folded forward as far as possible and then moved backward into position. (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

___ 10. Is the inboard receptacle end of the seat belt assembly, installed in the front outboard designated seating position, accessible with the center armrest in any position to which it can be adjusted (without moving the armrest)? (S7.4.6.2)
___ Yes-Pass; ___ **No-FAIL**

DATA SHEET 26

VEHICLE WEIGHT, FUEL TANK, AND ATTITUDE DATA

NHTSA No.: C30104 Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): D. Ledley, B. Miller, M. Postle

Impact Angle: 0° Belted Dummies: X Yes ___ No

Test Speed: ___ 32 to 40 km/h X 0 to 40 km/h ___ 0 to 48 km/h ___ 0 to 56 km/h

Driver Dummy: X 5th female ___ 50th male Passenger Dummy: X 5th female ___ 50th male

X 1. Fill the transmission with transmission fluid to the satisfactory range.
X 2. Drain fuel from vehicle
X 3. Run the engine until fuel remaining in the fuel delivery system is used and the engine stops.
X 4. Record the useable fuel tank capacity supplied by the COTR. 32.5 gal (123.0 l)
X 5 Record the fuel tank capacity supplied in the owner's manual. 31.0 gal (117.3 l)
___ 6.[1] Using purple dyed Stoddard solvent having the physical and chemical properties of Type 1 solvent or cleaning fluid, Table 1, ASTM Standard D484-71, "Standard Specifications for Hydrocarbon Dry-cleaning Solvents." fill the fuel tank with an amount equal to the useable capacity provided by the COTR.
Amount added ___
X 7. Crank the engine to fill the fuel delivery system with Stoddard solvent.
X 8. Fill the coolant system to capacity.
X 9. Fill the engine with motor oil to the max. mark on the dip stick.
X 10. Fill the brake reservoir with brake fluid to its normal level.
X 11. Fill the windshield washer reservoir to capacity.
X 12. Inflate the tires to the tire pressure on the tire placard. If no tire placard is available, inflate the tires to the recommended pressure in the owner's manual.
Tire placard pressure RF 35 ; LF 35 ; RR 35 ; LR 35
Owner's manual pressure[2] RF N/A ; LF N/A ; RR N/A ; LR N/A
Actual inflated pressure RF 35 ; LF 35 ; RR 35 ; LR 35
X 13. Record the vehicle weight at each wheel to determine the unloaded vehicle weight (UVW), i.e. "as delivered" weight).

Right Front =	581.0 kg	Right Rear =	616.0 kg
Left Front =	658.5 kg	Left Rear =	607.0 kg
TOTAL FRONT =	1239.5 kg	TOTAL REAR =	1223.0 kg
% Total Weight =	50.3 %	% Total Weight =	49.7 %

UVW = TOTAL FRONT PLUS TOTAL REAR = 2462.5 kg

X 14. UVW Test Vehicle Attitude: (all dimensions in millimeters)
X 14.1 Mark a point on the vehicle above the center of each wheel.
X 14.2 Place the vehicle on a level surface.
X 14.3 Measure perpendicular to the level surface to the 4 points marked on the body and record the measurements
RF 913 ; LF 914 ; RR 933 ; LR 930

X 15. Calculate the Rated Cargo and Luggage Weight (RCLW).

X 15.1 Does the vehicle have the vehicle capacity weight (VCW) on the certification label or tire placard?

___ Yes, go to 15.3.

X No, go to 15.2.

X 15.2 VCW = Gross Vehicle Weight – UVW

VCW = 3175 - 2462.5 = 712.5

X 15.3 VCW = 712.5

X 15.4 Does the certification or tire placard contain the Designated Seating Capacity (DSC)?

Yes, go to 15.6.

X No, go to 15.5

X 15.5 DSC = Total number of seat belt assemblies = 9

X 15.6 DSC = 9

X 15.7 RCLW = VCW – (68 kg x DSC) = 712.5 - (68 kg x 9) = 100.5

X 15.8 Is the vehicle certified as a truck, MPV or bus (see the certification label on the door jamb)?

X Yes, the maximum RCLW is 136 kg.

___ No, use the RCLW calculated in 15.7.

X 16. Fully Loaded Weight (100% fuel fill)

X 16.1 Place the appropriate test dummy in both front outboard seating positions.

Driver: X 5th female ___ 50th male

Passenger: X 5th female ___ 50th male

X 16.2 Load the vehicle with the RCLW from 15.7 or 15.8 whichever is applicable.

X 16.3 Place the RCLW in the cargo area. Center the load over the longitudinal centerline of the vehicle. (S8.1.1 (d))

X 16.4 Record the vehicle weight at each wheel to determine the Fully Loaded Weight.

Right Front	= 605.6 kg		Right Rear	= 699.4	kg
Left Front	= 685.4 kg		Left Rear	= 689.0	kg
TOTAL FRONT	= 1291.0 kg		TOTAL REAR	= 1388.4	kg
% Total Weight	= 48.2 %		% Total Weight	= 51.8	%
% GVW	= 40.7 %		% GVW	= 59.3	%

FULLY LOADED WEIGHT = TOTAL FRONT + TOTAL REAR = 2679.4 kg

X 17. Fully Loaded Test Vehicle Attitude: (all dimensions in millimeters

X 17.1 Place the vehicle on a level surface.

X 17.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 14.1 above) and record the measurements

RF 905 ; LF 905 ; RR 908 ; LR 910

X 18.[3] Calculate the test weight range (94% fuel fill).

X 18.1 Calculated Test Weight = Fully Loaded Condition (See 16.4 above) – ((.06 x useable fuel tank capacity) x 0.79kg/liter)

Calculated Test Weight – 2679.4 - (.06 x 117.3 l x 0.79 kg/l) = 2673.8 kg

X 18.2 Test Weight Range = Calculated Test Weight (- 4.5 kg, - 9 kg.)

Max. Weight = Calculated Test Weight - 4.5 kg = 2669.3

Min. Weight = Calculated Test Weight - 9 kg = 2664.8

X 19. Remove the RCLW from the cargo area.

____ 20.[4] Remove Stoddard solvent from the gas tank in the amount of 6% of the useable capacity as supplied by the COTR. .06 x _____ (useable capacity) = _____
Amount removed _____

_X_ 21. Drain transmission fluid, engine coolant, motor oil, and windshield washer fluid from the test vehicle so that Stoddard solvent leakage from the fuel system will be evident.

_X_ 22. Vehicle Components Removed For Weight Reduction:
None

_X_ 23. Secure the equipment and ballast in the load carrying area and distribute it, as nearly as possible, to obtain the proportion of axle weight indicated by the gross axle weight ratings and center it over the longitudinal centerline of the vehicle.

_X_ 24. If necessary, add ballast to achieve the actual test weight.
____ N/A
Weight of ballast 58.1 kg

_X_ 25. Ballast, including test equipment, must be contained so that it will not shift during the impact event or interfere with data collection or interfere with high-speed film recordings or affect the structural integrity of the vehicle or do anything else to affect test results. Care must be taken to assure that any attachment hardware added to the vehicle is not in the vicinity of the fuel tank or lines.

_X_ 26. Record the vehicle weight at each wheel to determine the actual test weight.

Right Front	= 636.4 kg		Right Rear	= 699.6	kg
Left Front	= 671.8 kg		Left Rear	= 676.5	kg
TOTAL FRONT	= 1308.2 kg		TOTAL REAR	= 1376.1	kg
% Total Weight	= 48.7 %		% Total Weight	= 51.3	%
% GVW	= 41.2 %		% GVW	= 58.8	%

(%GVW = Axle GVW : Vehicle GVW)

TOTAL FRONT PLUS TOTAL REAR = 2684.3 kg

_X_ 27. Is the test weight between the Max. Weight and the Min. Weight (See 18.2)?
____ Yes
_X_ No, explain why not. See Section 4.0, Discussion of Test Results

_X_ 28. Test Weight Vehicle Attitude: (all dimensions in millimeters)
X 28.1 Place the vehicle on a level surface.
_X_ 28.2 Measure perpendicular to the level surface to the 4 points marked on the body (see 3 above) and record the measurements
RF 910 ; LF 900 ; RR 898 ; LR 91

_X_ 29. Summary of test attitude

_X_ 29.1

AS DELIVERED: RF 913 ; LF 914 ; RR 933 ; LR 930

AS TESTED: RF 910 ; LF 900 ; RR 898 ; LR 911

FULLY LOADED: RF 905 ; LF 905 ; RR 908 ; LR 910

_X_ 29.2 Is the "as tested" test attitude equal to or between the "fully loaded" and "as delivered" attitude?

____ Yes

_X_ No, explain why not. COTR approved on day of test.

[1] At this step the gasoline in the fuel tank was topped off (Stoddard was not introduced until after fully loaded weight and attitudes were obtained). The exact amount of fuel in the tank was unknown.

[2] The Owner's Manual said to see Certification/Tire Label for tire pressure.

[3] The fuel tank capacity supplied in the Owner's Manual was used per the COTR.

[4] At this step Stoddard solvent was introduced into the drained fuel tank: 0.94 x 117.3 liter (from Owner's Manual per COTR). A total of 110.3 liters was added.

DATA SHEET 27
Vehicle Accelerometer Location

NHTSA No.: C30104 Test Date: 11/12-13/02

Laboratory: TRC Inc. Test Technician(s): D. Ledley

Impact Angle: 0° Belted Dummies: X Yes ___ No

Test Speed: ___ 32 to 40 km/h X 0 to 40 km/h ___ 0 to 48 km/h ___ 0 to 56 km/h

Driver Dummy: X 5th female ___ 50th male Passenger Dummy: X 5th female ___ 50th male

X 1. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the left front outboard seating position intersects the left rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.

X 2. Find the location where the vertical plane parallel to the longitudinal centerline of the vehicle and through the center of the right front outboard seating position intersects the right rear seat cross member. Install an accelerometer at this intersection on the rear seat cross member to record x-direction accelerations. Record the location on the following chart.

X 3. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect at the top of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.

X 4. Find the location where a vertical plane through the longitudinal centerline of the vehicle and a vertical transverse plane through the center of the two wheels on opposite sides of the engine intersect the bottom of the engine. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.

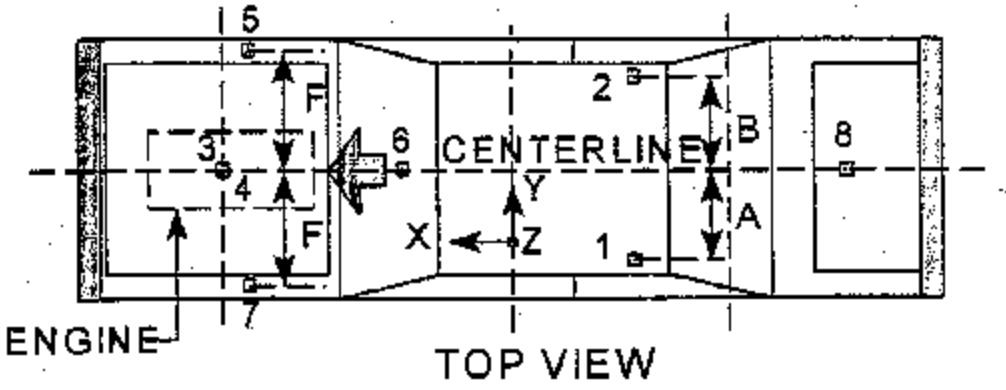
X 5. Install an accelerometer on the right front brake caliper to record x-direction accelerations. Record the location on the following chart.

X 6. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the top of the instrument panel. Install an accelerometer at this intersection to record x-direction accelerations. Record the location on the following chart.

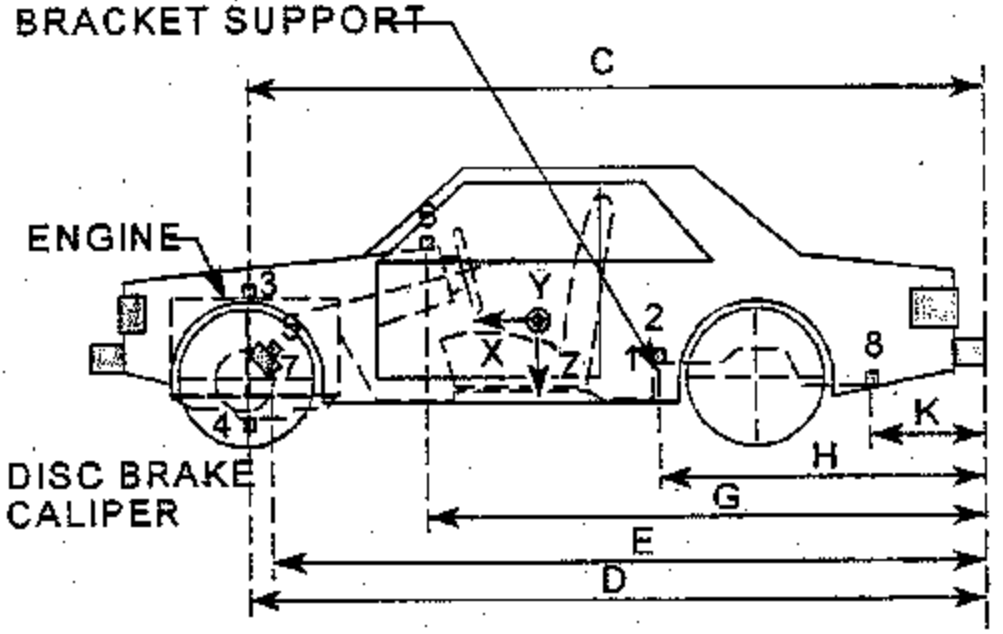
X 7. Install an accelerometer on the left front brake caliper to record x-direction accelerations. Record the location on the following chart.

X 8. Find the location where a vertical plane through the longitudinal centerline of the vehicle intersects the floor of the trunk. Install an accelerometer on the trunk floor at this intersection to record z-direction accelerations. Record the location on the following chart.

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



TOP VIEW



LEFT SIDE VIEW

DATA SHEET 27
VEHICLE ACCELEROMETER LOCATION MEASUREMENTS

DIMENSION	LENGTH (mm)
PRE-TEST VALUES	
A	*
B	*
C	4642
D	4350
E	4480 left; 4480 right
F	*
G	3786
H	2445 left; 2405 right
K	303
POST-TEST VALUES	
A	710
B	657
C	4642
D	4367
E	4400 left; 4527 right
F	*
G	3786
H	2450 left; 2410 right
K	305

REMARKS: * Several lateral measurements were inadvertently omitted.

DATA SHEET 28
Photographic Targets

NHTSA No.: C30104 Test Date: 11/12-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, B. Miller, J. Clarridge, M. Postle

Impact Angle: 0° Offset percentage: 40 Belted Dummies: X Yes ___ No

Test Speed: ___ 32 to 40 km/h X 0 to 46 km/h ___ 0 to 48 km/h ___ 0 to 56 km/h

Driver Dummy: X 5th female ___ 50th male Passenger Dummy: X 5th female ___ 50th male

1. FMVSS 208 vehicle targeting requirements (See Figures 28A and 28B)

X 1.1 Targets A1 and A2 are on flat rectangular panels.

X 1.2 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the front on the outboard sides of A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 mm

X 1.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted at the back on the outboard sides of on A1 and A2. The center of each circular target is 100 mm from the one next to it. Distance between targets 127 mm

X 1.4 The distance between the first circular target at the front of A1 and A2 and the last circular target at the back of A1 and A2 is at least 915 mm.
Distance between the first and last circular targets 915 mm

X 1.5 Firmly fix target A1 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy.

X 1.6 Firmly fix target A2 on the vehicle roof in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.

X 1.7 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the driver door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm

X 1.8 Two circular targets (C1 and C2) at least 90 mm in diameter and with black and yellow quadrants are mounted on the outside of the passenger door. The centers of each circular target are at least 610 mm apart. Distance between targets 610 mm

X 1.9 Place tape with squares having alternating colors on the top portion of the steering wheel.

X 1.10 Chalk the bottom portion of the steering wheel.

X 1.11 Is this an offset test?
X Yes, continue with this section
___ No, go to 2.

X 1.12 Measure the width of the vehicle. Vehicle width 1994 mm

X 1.13 Find the centerline of the vehicle. (½ of the vehicle width)

X 1.14 Find the line parallel to the centerline of the vehicle and 0.1 x vehicle width from the centerline of the vehicle.

X 1.15 Apply 25 mm wide tape with alternating black and yellow squares parallel to and on each side of the line found in 1.14. The edge of each tape shall be 50 mm from the line found in 1.14. The tape shall extend from the bottom of the bumper to the front edge of the windshield. (Figure 28D)

2. Barrier targeting

X 2.1 Fix two stationary targets D1 and D2 to the barrier as shown in the Figure 28A. One target is in the vertical longitudinal plane that is coincident with the midsagittal plane of the driver dummy. The other is in the vertical longitudinal plane that is coincident with the midsagittal plane of the passenger dummy.

Only one target over driver dummy.

X 2.2 Targets D1 and D2 are on a rectangular panel. No D2 target

X 2.3 Three circular targets at least 90 mm in diameter and with black and yellow quadrants are mounted on the sides of the rectangular panel away from the longitudinal centerline of the vehicle. The center of each circular target is 100 mm from the one next to it.

Distance between circular targets on D1 127 mm

Distance between circular targets on D2 N/A mm

3. FMVSS 208 dummy targeting requirements

X 3.1 Place a circular target with black and yellow quadrants on both sides of the driver dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).

X 3.2 Place a circular target with black and yellow quadrants on both sides of the passenger dummy head as close as possible to the center of gravity of the head in the x and z direction (relative to the measuring directions of the accelerometers).

X 3.3 Place a circular target with black and yellow quadrants on the outboard shoulder of the driver dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.

X 3.4 Place a circular target with black and yellow quadrants on the outboard shoulder of the passenger dummy. Place the target as high up on the arm as possible at the intersection of the arm and shoulder. The sleeve of the shirt on the dummy may be cut to make the target visible, but do not remove any material.

4. FMVSS 204 targeting requirements

X 4.1 Is an FMVSS 204 indicant test ordered on the "COTR Vehicle Work Order?"

___ Yes, continue with this form.

X No, this form is complete

4.2 Resection panel (Figure 28C)

4.2.1 The panel deviates no more than 6 mm from perfect flatness when suspended vertically.

___ 4.2.2 The 8 targets on the panel are circular targets at least 90 mm in diameter and with black and yellow quadrants.

___ 4.2.3 The center of each of the 4 outer targets are placed within 1 mm of the corners of a square measuring 914 mm on each side.

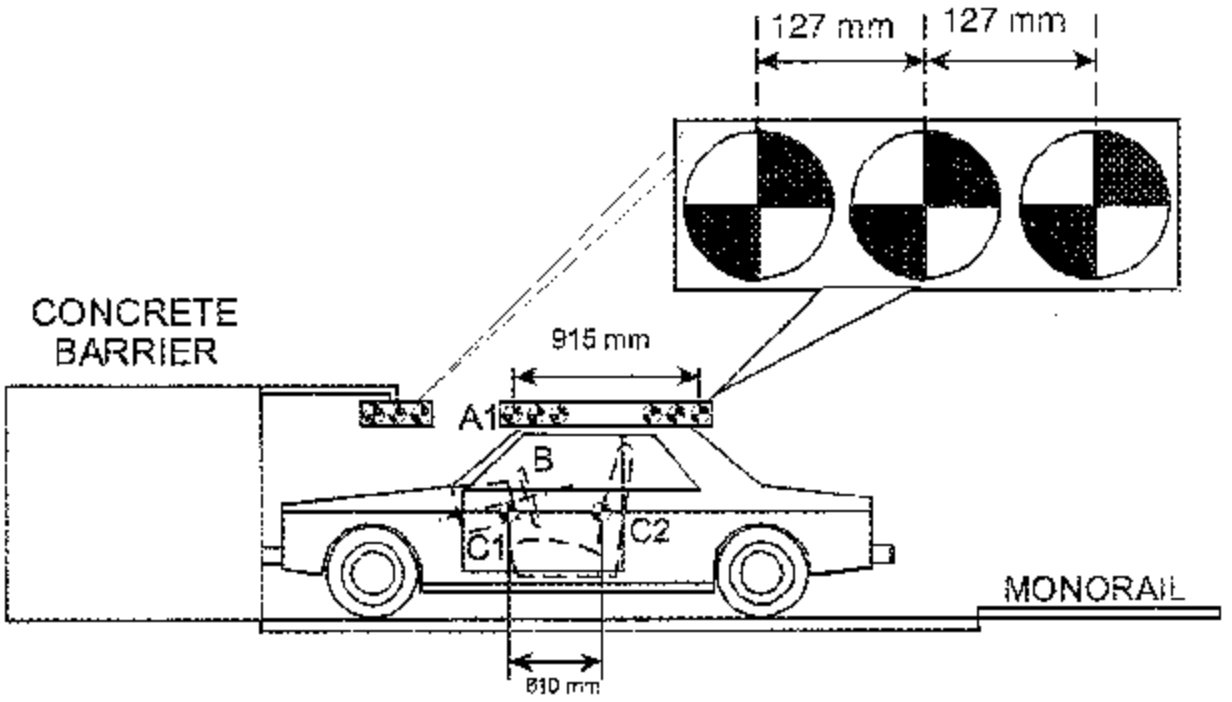
4.2.4 Locate another square with 228 mm sides and with the center of this square coincident with the center of the 914 mm square.

___ 4.2.5 The center of the 4 inner targets are placed at the midpoints of each of the 228 mm sides.

___ 4.3 Place a circular target at least 90 mm in diameter and with black and yellow quadrants on a material (cardboard, metal, etc.) that can be taped to the top of the steering column.

___ 4.4 Tape the target from 4.3 to the top of the steering column in a manner that does not interfere with the movement of the steering column in a crash.

REFERENCE PHOTO TARGETS



COVERED PHOTO PIT

LEFT SIDE VIEW

FIGURE 28A

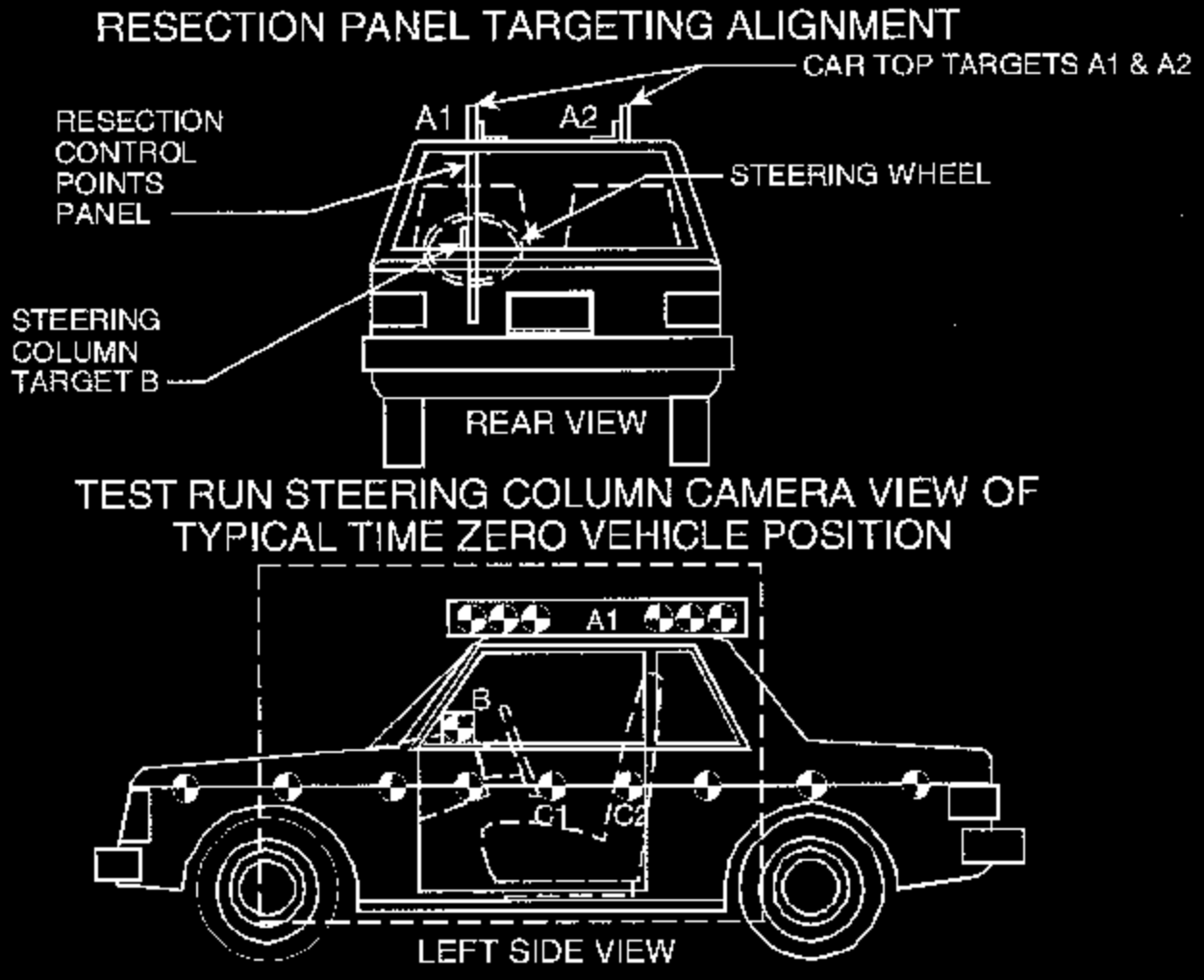
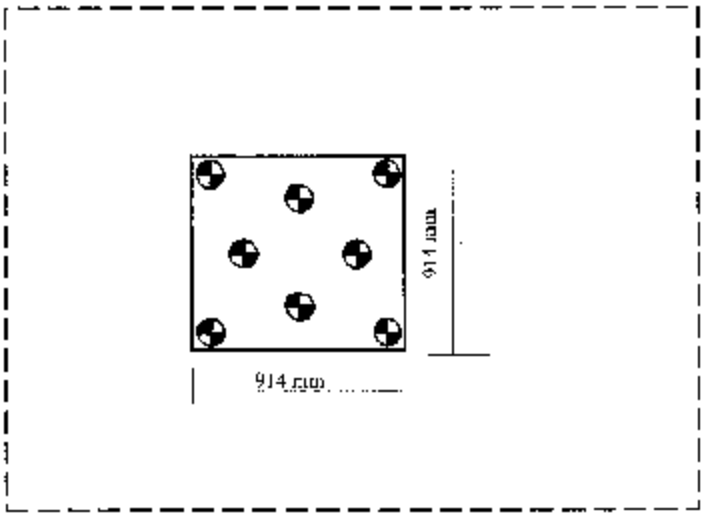

RESECTION PANEL TARGETING ALIGNMENT
CAR TOP TARGETS A1 & A2
A1
A2
RESECTION CONTROL POINTS PANEL
STEERING WHEEL
STEERING COLUMN TARGET B
REAR VIEW
TEST RUN STEERING COLUMN CAMERA VIEW OF TYPICAL TIME ZERO VEHICLE POSITION
A1
B
C1
C2
LEFT SIDE VIEW

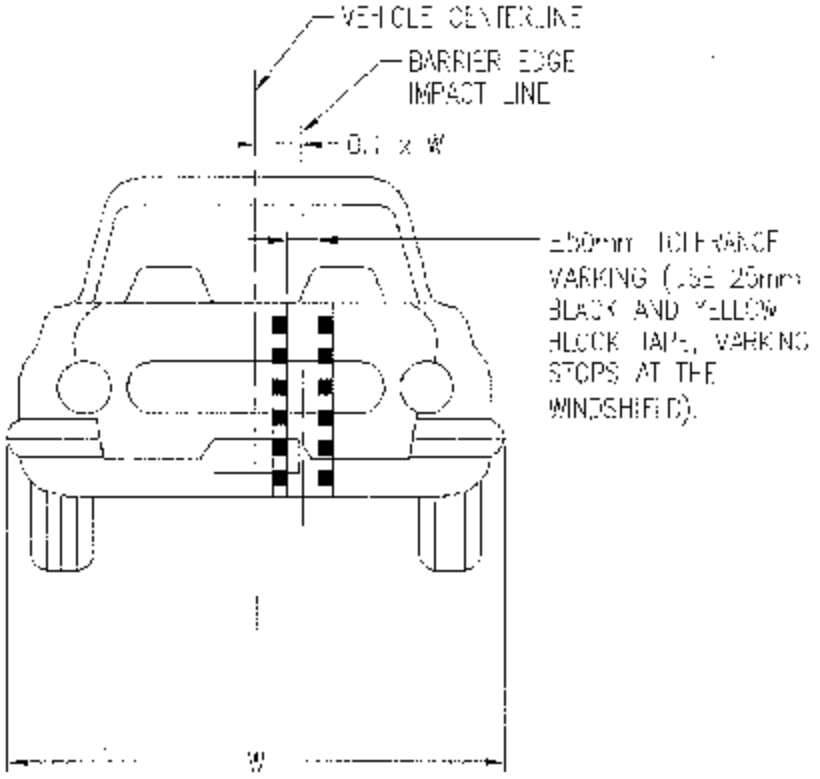
FIGURE 28B

PRE-RUN STEERING COLUMN HIGH SPEED CAMERA VIEW



LEFT SIDE VIEW

FIGURE 28C



OFFSET DEFORMABLE BARRIER
ADDITIONAL VEHICLE TARGETING

FIGURE 28D

DATA SHEET 29
CAMERA LOCATIONS

VEH. NHTSA No.: C30104 ; TEST DATE: 11/14/02 ; TIME: 1617

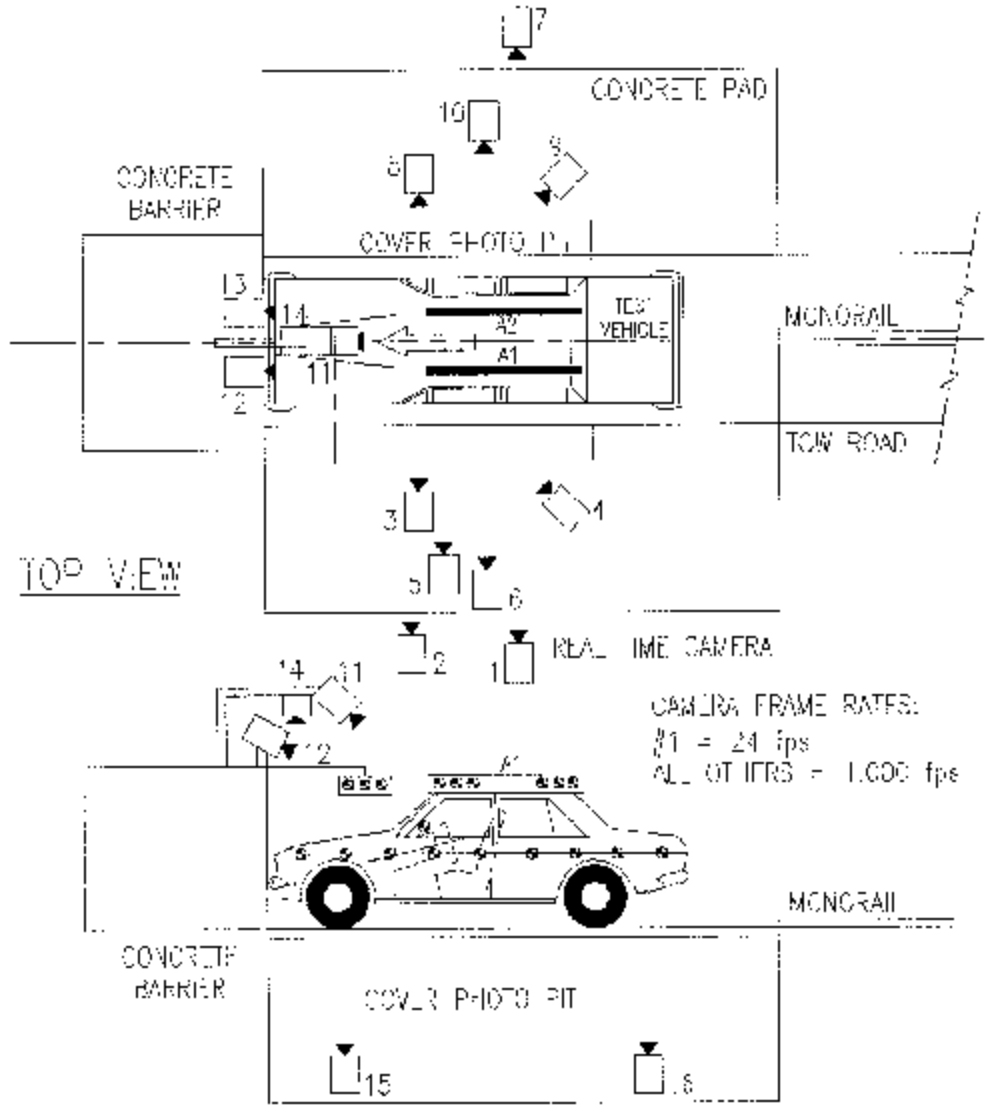
VEH. YEAR/MAKE/MODEL/BODY STYLE: 2003/Chevrolet/Suburban/MPV

CAMERA NO.	VIEW	CAMERA POSITIONS (mm) *			ANGLE (deg.)	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Left Side Panning View	N/A[1]	N/A[1]	N/A[1]	N/A[1]	N/A[1]	Zoom	24
2	Left Side View (barrier face to front seat backs)	-1000	-8250	-1090	0	8090	25	1000
3	Left Side View (A-post)	-2830	-7585	-1550	-0.5	7104	35	1010
4	Left Side View (B-post aimed toward center of steering wheel)	-5510	-4710	-1970	-10	4040	25	1000
5	Left Side View (B-post)	-3750	-7790	-1470	2	7212	35	1000
6	Left Side View (front door under camera 5)	-2370	-7930	-1180	-1	7445	25	1000
7[2]	Right Side View (overall)	-1730	9130	-1334	-3	8750	13	1000
8	Right Side View (A-post)	-2490	6709	-1579	-2	6154	25	1000
9	Right Side View (B-post-angled)	-6130	4930	-1930	-6	4020	25	1000
10	Right Side View (front door)	-2220	7030	-1180	1	6473	25	1000
11[2]	Front View Windshield	1970	0	-2600	-37	4570	8.5	1000
12[2]	Front View Driver	1990	-255	-2630	-25	4590	25	1000
13[2]	Front View Passenger	1950	250	-2630	-25	4530	25	1000
14[2]	Overhead Barrier Impact View	530	0	-5600	-90	NA[1]	25	1000
15	Pit Camera Engine View	-500	-120	850	90	NA[1]	13	997
16	Pit Camera Fuel Tank View	-2190	-120	1010	90	NA[1]	13	NA[3]

* +X - film plane forward (downstream) from barrier impact surface
+Y - film plane to right of monorail centerline from driver's perspective
+Z - film plane below ground level

[1] Not applicable
[2] Digital camera
[3] Unable to determine speed, no timing LED's.

CAMERA POSITIONS FOR FRONTAL IMPACTS



LEFT SIDE VIEW

DATA SHEET 30 - DRIVER

DUMMY POSITIONING PROCEDURES FOR TEST DUMMY CONFORMING TO SUBPART O OF PART 572

Seating Procedure 5th Percentile Female Driver Dummy (Part 572, Subpart O) (S16.2- S16.3)

NHTSA No.: C30104 Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle

Test Number: 021114

Seat Type: ____ Bench _X_ Bucket ____ Split Bench
(Check One)

1.0 Seat Positioning (S16.2.10)

X 1.1 Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)
X N/A No lumbar adjustment

X 1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A – No additional support adjustment

X 1.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
X N/A - No independent fore-aft seat cushion adjustment

X 1.4 If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
____ N/A - No independent seat cushion height adjustment.

X 1.5 Put the seat in its full rearward position. (S16.2.10.3.)
____ N/A - the seat does not have a fore-aft adjustment

X 1.6 If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A – No seat height adjustment

X 1.7 Draw a horizontal line on the side of the seat cushion.

X 1.8 Using only the controls which change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position rearward of the mid-point), and R for full rearward.
____ N/A - The seat does not have a fore-aft adjustment.

X 1.9 Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)
____ N/A - The seat does not have a fore-aft adjustment.

X 1.10 If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)
____ N/A No adjustments
Angle of the line on side of the seat cushion in the full forward position. 0.3 degrees

_X_ 1.11 If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)

_X_ 1.12 Record the mid height position. (S16.2.10.3.3)

_____ N/A – No seat height adjustment

Max. height from S1 117 mm

Min. height from S1 88 mm

Test height from S1 102 mm

Angle of line on seat cushion at test height. 0.3 degrees

_X_ 1.13 Record the horizontal longitudinal distance between Point S1 and Point S2.

S1, S2 separation. 5 mm

2.0 Dummy Positioning

_X_ 2.1. Is the seat a bucket seat? _X_ Yes _____ No

If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.

2.1.1 Bucket seats:

Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.1.10) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

Record the width of the seat cushion. 555 mm

Record the distance from the edge of the seat cushion to the vertical plane. 277.5 mm

2.1.2 Bench seats and split bench seats:

Mark a longitudinal vertical plane that coincides with the center of the steering wheel (S16.3.2.1.4)

_X_ 2.2 If the vehicle has an adjustable accelerator pedal, place it in the full forward position. (S16.3.2.2.1)

_X_ N/A accelerator pedal not adjustable

_X_ 2.3 With the seat in the position from step 1.11, move the seat to the full rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.2.1.1)

_X_ 2.4 Fully recline the seat back. (S16.3.2.1.2)

_____ N/A seat back not adjustable.

_X_ 2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.2.1.2)

_X_ 2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.2.1.3)

_X_ 2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.2.1.6)

_X_ 2.8 Set the angle between the legs and the thighs to 120 degrees.

_X_ 2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm. (6.3 to 6.7 inches) Center the knee separation with respect to the seat centerline. (S16.3.2.1.6)

Record Knee Separation 165 mm

_X_ 2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.2.1.6)

_____ Pelvis contacted seat back.

_X_ Calves contacted seat cushion.

_X_ 2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.2.1.7)

_X_ 2.12 If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion (S16.3.2.1.8)

_X_ 2.13 Position the right foot until the foot is in line with a longitudinal vertical plane passing through the center of the accelerator pedal. Maintain the leg and thigh in a vertical plane. (S16.3.2.1.8)

X 2.14 Rotate the left leg and thigh laterally to equalize the distance between each knee and the seating position centerline. (S16.3.2.1.8)

_X_ 2.15 Using only the controls that move the seat fore and aft, attempt to return the seat to the full forward position. The right foot may contact and depress the accelerator and/or change the angle of the foot with respect to the leg. (S16.3.2.1.8)

_X_ Full forward position achieved. Proceed to step 2.20.
_____ Full forward not achieved because of foot interference. Proceed to step 2.17
_____ Full forward not achieved because of steering wheel contact.

_X_ 2.16 If the dummy's legs contact the steering wheel, move the steering wheel up the minimum amount required to avoid contact. If the steering wheel is not adjustable separate the knees the minimum required to avoid contact. (S16.3.2.1.8)

_X_ N/A- there was no leg contact
_____ Steering wheel repositioned
_____ Knees separated

_X_ 2.17 If the left foot interferes with the clutch or brake pedals, rotate the left foot about the leg to provide clearance. If this is not sufficient, rotate the left thigh outboard at the hip the minimum amount required for clearance. (S16.3.2.1.8)

_X_ N/A No foot interference with pedals.
_____ Foot adjusted to provided clearance.
_____ Foot and Thigh adjusted to provide clearance.

_X_ 2.18 Continue to move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.2.1.8)

_X_ Full Forward reached
Dummy contact. Clearance set at maximum of 5mm
Measured Clearance _____
_____ Dummy Contact. Seat set at nearest detent position.
Seat position _____ detent positions rearward of full forward
(full forward is position zero)

_X_ 2.19 If the steering wheel was repositioned in step 2.16, return the steering wheel to the original position. If the steering wheel contacts the dummy before reaching the original position, position the wheel until a maximum clearance of 5mm (.2 inches) is achieved, or the steering wheel is in the closest detent position that does not cause dummy contact.

_____ N/A Steering wheel was not repositioned.
_X_ Original position achieved.
_____ Dummy contact. Clearance set at maximum of 5mm
Measured Clearance _____
_____ Dummy Contact. Steering wheel set at nearest detent position.
Steering wheel position _____ detent positions upward of original position.
(Original position is position zero)

_X_ 2.20 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level +/- 0.5 degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle.

_X_ Head Level Achieved. (Check all that apply)
_X_ Head leveled using the adjustable seat back
_____ Head leveled using the neck bracket.
Head Angle _0_____ degrees
_____ Head Level NOT Achieved. (Check all that apply)
_____ Head leveled using the adjustable seat back
Head leveled using the neck bracket.
Head Angle _____ degrees

_X_ 2.21 Verify the pelvis is not interfering with the seat bight.

X 2.22 Verify the dummy abdomen is properly installed.

X 2.23 If the dummy torso contacts the steering wheel while performing step 2.20, reposition the steering wheel in the following order to eliminate contact.

X N/A No dummy torso contact with the steering wheel.

____ 2.23.1 Adjust telescoping mechanism.

____ N/A No telescoping adjustment.

____ Adjustment performed (fill in appropriate change)

Steering wheel moved ____ detent positions in the forward direction.

Steering wheel moved ____ mm in the forward direction.

____ 2.23.2 Adjust tilt mechanism.

____ N/A No tilt adjustment.

____ No adjustment performed.

____ Adjustment performed.

Steering wheel moved ____ detent positions Upward/Downward.
(circle one)

Steering wheel moved ____ degrees Upward/Downward

____ 2.23.3 Adjust Seat in the aft direction.

____ No Adjustment performed.

____ Seat moved aft ____ mm from original position.

____ Seat moved aft ____ detent positions from the original position.

X 2.24 Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees +/- 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference.

X Pelvic angle set to 20.0 degrees +/- 2.5 degrees.

____ Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.

X Record the pelvic angle. 21.4 degrees

X 2.25 Check the dummy for contact with interior after completing adjustments.

X No contact.

____ Dummy in contact with interior.

____ Seat moved Aft ____ mm from the previous position.

____ Seat moved Aft ____ detent positions from the previous position.

X 2.26 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward.

X N/A Seat already at full forward position.

____ Clearance unchanged. No adjustments required.

____ Additional clearance available

____ Seat moved Forward ____ mm from the previous position.

____ Seat moved Forward ____ detent positions from the previous position.

X 2.27 Driver's foot positioning, right foot

X 2.27.1 Place the foot perpendicular to the leg and determine if the right heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.28 otherwise, proceed to step 2.29.

X 2.28 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.28.6 shall be completed in all cases.

X 2.28.1 With the rear of the heel contacting the floor pan, move the foot forward until pedal contact occurs or the foot is at the full forward position.

X 2.28.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position.

____ 2.28.3 Extend the leg, allowing the heel to lose contact with the floor until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

____ 2.28.4 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

____ 2.28.5 Align the center line of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

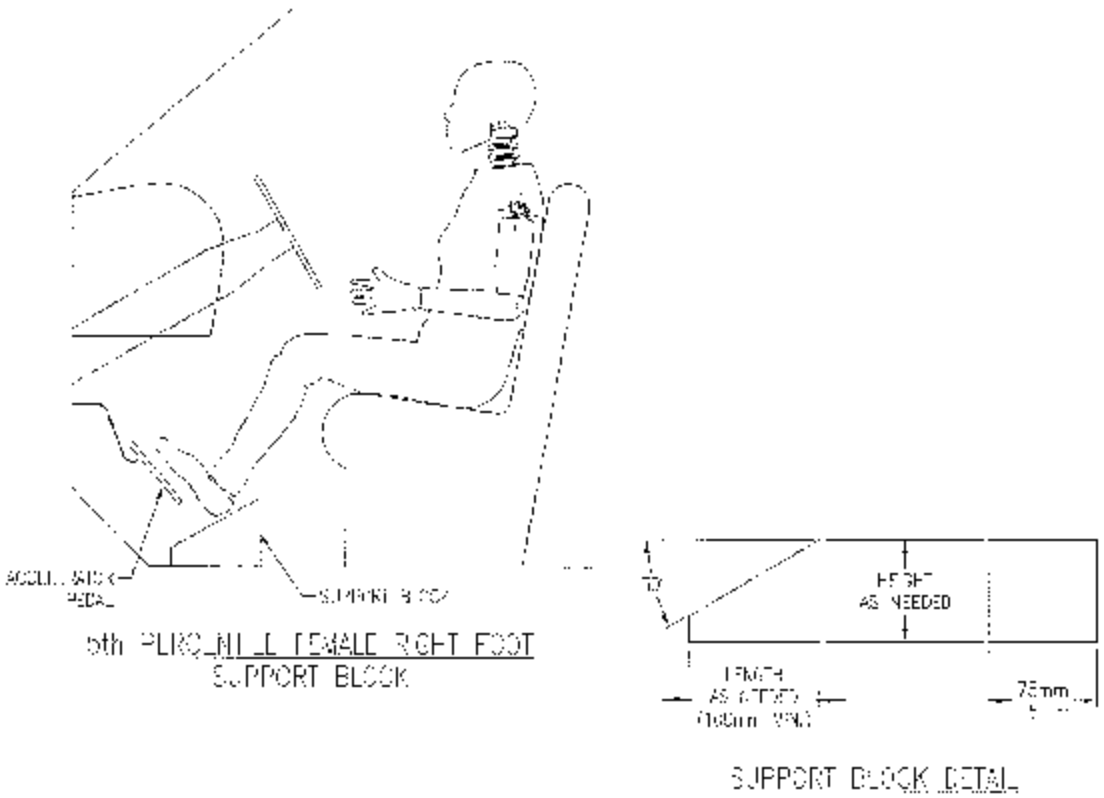
_X_ 2.28.6 Record foot position

_X_ Pedal Contact achieved. Contact occurred at step 2.28.2 .

_X_ Heel contacts floor pan

____ Heel set _____ mm from floor pan.

____ Pedal Contact not achieved. Heel set mm from the floor pan.



95th PERCENTILE FEMALE RIGHT FOOT SUPPORT BLOCK

SUPPORT BLOCK DETAIL

FIGURE G1

____ 2.29 Perform the following steps until either all steps are completed, or the foot contacts the accelerator pedal. Step 2.29.5 shall be completed in all cases.

____ 2.29.1 Extend the leg until the foot contacts the pedal. Do not raise the toe of the foot higher than the top of the accelerator pedal. If the foot does not contact the pedal, proceed to the next step. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

____ 2.29.2 If the vehicle has an adjustable accelerator pedal, move the pedals rearward until pedal contact occurs or the pedals reach the full rearward position. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

_____ 2.29.3 Angle the foot to achieve contact between the foot and the pedal. If the foot does not contact the pedal, return the foot to the perpendicular orientation. If pedal contact does occur, place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

_____ 2.29.4 Align the centerline of the foot in the same horizontal plane as the centerline of the accelerator pedal. Place a tapered foam block as shown in Figure G1 under the heel with the shallow part of the taper facing forward.

_____ 2.29.5 Record foot position

_____ Pedal Contact achieved. Contact occurred at step _____.
_____ Heel set _____ mm from floor pan.

_____ Pedal Contact not achieved. Heel set ____ mm from the floor pan.

_X_ 2.30 Driver's foot positioning, left foot.

_X_ 2.30.1 Place the foot perpendicular to the leg and determine if the left heel contacts the floor pan at any leg position. If the heel contacts the floor pan proceed to step 2.30.2 otherwise, position the leg as perpendicular to the thigh as possible with the foot parallel to the floor pan.

_X_ 2.30.2 Place the left foot on the toe board with the heel resting on the floor pan as close to the intersection of the floor pan and the toe board as possible. Adjust the angle of the foot if necessary to contact the toe board. If the foot will not contact the toe board, set the foot perpendicular to the leg, and set the heel on the floor pan as far forward as possible. Do not place the foot on the wheel well projection or footrest. If the pedals interfere with the placement of the foot, reposition the foot by rotating the foot about the leg, or rotate the leg outboard about the hip if necessary.

_____ Foot rotated about the leg
_____ Foot rotated about the leg, and the leg rotated about the hip.
_X_ No pedal interference

_X_ 2.30.3 Record foot position.

_____ Heel does not contact floor pan.
Foot placed on toe board.
_X_ Foot placed on floor pan.

_X_ 2.31 Driver arm/hand positioning.

_X_ 2.31.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)

_X_ 2.31.2 Place the palms of the dummy in contact with the outer part of the steering wheel rim at its horizontal centerline with the thumbs over the steering wheel rim. (S16.3.2.3.2)

_X_ 2.31.3 If it is not possible to position the thumbs inside the steering wheel rim at its horizontal centerline, then position them above and as close to the horizontal centerline of the steering wheel rim as possible. (S16.3.2.3.3)

_X_ 2.31.4 Lightly tape the hands to the steering wheel rim so that if the hand of the test dummy is pushed upward by a force of not less than 9 N (2 lb) and not more than 22 N (5 lb), the tape releases the hand from the steering wheel rim. S16.3.2.3.4

_X_ 2.32 Adjustable head restraints

_____ 2.32.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)

_X_ N/A Vehicle does not contain automatic head restraints.

_X_ 2.32.2 Adjust each head restraint to its lowest position. (S16.3.4.2)

_X_ 2.32.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust each head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)

Vertical height of head restraint 205 mm
Mid-point height _____ mm

_X_ 2.32.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)

_____ N/A midpoint position attained in previous step
_X_ Headrest set at nearest detent below the head CG

X 2.32.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment

X 2.33 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy). S16.3.5

X 2.33.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.
Manufacturer's specified position Fixed

Actual Position Fixed

X 2.33.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)

X 2.33.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)

X 2.33.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract: repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)

DATA SHEET 30 - PASSENGER
Seating Procedure 5th Percentile Female Passenger Dummy
(Part 572, Subpart O) (S16.2- S16.3)

NHTSA No.: C30104 Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle, B. Miller

Test Number: 021114

Seat Type: Bench X Bucket ____ Split Bench

1.0 Seat Positioning (S16.2.10)

X 1.1. Position the seat's adjustable lumbar supports so that the lumbar supports are in the lowest, retracted or deflated adjustment position. (S16.2.10.1)
X N/A – No lumbar adjustment

X 1.2. Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S16.2.10.2)
X N/A – No additional support adjustment

X 1.3. If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S16.2.10.3.1)
____ N/A – No independent fore-aft seat cushion adjustment

X 1.4 If the seat cushion height adjusts independent of the seat back, set this adjustment to the full down position. (S16.2.10.3.1)
X N/A – No independent seat cushion height adjustment.

X 1.5 If the seat is a bench seat, use the position determined for the driver's side and proceed to Section 2.0.
X N/A- Seat is not a bench seat.

X 1.6 Put the seat in its full rearward position. (S16.2.10.3.1)
____ N/A - the seat does not have a fore-aft adjustment

X 1.7 If the seat height is adjustable, put it in the full down position. (S16.2.10.3.1)
X N/A No seat height adjustment

X 1.8 Draw a horizontal line on the side of the seat cushion.

X 1.9 Using only the controls which change the seat in the fore-aft direction, mark the fore-aft seat positions. Mark the side of the seat and a reference position directly below on a part of the vehicle that does not adjust. For manual seats, move the seat forward one detent at a time and mark each detent as was done for the full rearward position. For power seats, mark only the full rearward, middle, and full forward positions. Label three of the positions with the following: F for full forward, M for mid-position (if there is no mid position, label the closest adjustment position rearward of the mid-point), and R for full rearward.
___ N/A The seat does not have a fore-aft adjustment.

X 1.10 Using only the controls which change the seat in the fore-aft direction, place the seat in the full forward position. (S16.2.10.3.2)
____ N/A - The seat does not have a fore-aft adjustment.

X 1.11 If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal. (S16.2.10.3.2)
X N/A – No adjustments
Angle of the line on side of the seat cushion in the full forward position. 0.8 degrees

X 1.12 If the seat height is adjustable, determine the maximum and minimum heights. Identify a reference point on the vehicle that does not move with respect to the seat. Identify this point as "S1". Mark a reference point on the seat. Identify this point as "S2". Locate the maximum height, the minimum height and the mid height with respect to the S1 reference point. If seat adjustments other than fore-aft are present and the line on the side of the seat cushion changes from the horizontal, use those adjustment to maintain the line as close as possible to the horizontal at all height positions. (S16.2.10.3.3)

_X_ 1.13 Record the mid height position of S2. (S16.2.10.3.3)

_X_ N/A – No seat height adjustment

Max. height from S1 ___

Min. height from S1 _____

Test height from S1 _____

Angle of line on seat cushion at test height, _____ degrees

____ 1.14 Record the horizontal longitudinal distance between Point S1 and Point S2.

S1, S2 separation, _____

2.0 Dummy Positioning

NOTE: Certain steps may need to be performed simultaneously with the positioning of the driver side dummy.

_X_ 2.1. Is the seat a bucket seat? _X_ Yes __ No

If yes, go to 2.1.1 and skip 2.1.2. If no, go to 2.1.2 and skip 2.1.1.

2.1.1 Bucket seats:

Locate and mark a vertical plane through the longitudinal centerline of the seat. (S16.3.1.10) The longitudinal centerline of a bucket seat cushion is determined at the widest part of the seat cushion. Measure perpendicular to the longitudinal centerline of the vehicle.

Record the width of the seat cushion. 560 mm

Record the distance from the edge of the seat cushion to the vertical plane. 280 mm

2.1.2 Bench seats and split bench seats:

Mark a longitudinal vertical plane that is the same distance from the longitudinal centerline of the vehicle as the center of the steering wheel (S16.3.3.1.4)

_X_ 2.3 With the seat in the position from step 1.5 or 1.13, move the seat to the full rearward position using controls that affect the fore and aft position. Do not use height or angle controls. (S16.3.3.1.1)

_X_ 2.4 Fully recline the seat back. (S16.3.3.1.2)

_____ N/A seat back not adjustable.

_X_ 2.5 Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.3.1.2)

_X_ 2.6 Position the dummy midsagittal plane vertical and coincident with the seating position centerline. (S16.3.3.1.3 or S16.3.3.1.4)

_X_ 2.7 Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.3.1.5)

_X_ 2.8 Set the angle between the legs and the thighs to 120 degrees. (S16.3.3.1.6)

_X_ 2.9 Set the transverse distance between the centers of the front of the knees at 160 to 170 mm (6.3 to 6.7 inches). Center the knee separation with respect to the seat centerline. (S16.3.3.1.6)

Record Knee Separation 165 mm

_X_ 2.10 Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first (S16.3.3.1.6)

_____ Pelvis contacted seat back.

_X_ Calves contacted seat cushion.

_X_ 2.11 Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.3.1.7)

____ 2.12 If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.3.1.8)

___ 2.13 If the seat is a bench seat perform the driver dummy setup first and perform only the steps that do not affect the seat position or seat back angle of the driver as indicated. (S16.2.10.3)

X 2.14 Using only the controls that move the seat fore and aft, move the seat forward until the full forward position is reached, or until the dummy contacts the interior. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position which does not cause dummy contact. (S16.3.3.1.8)

____ N/A Bench Seat

_X_ Full Forward reached

____ Dummy contact. Clearance set at maximum of 5mm

Measured Clearance _____ mm

____ Dummy Contact. Seat set at nearest detent position.

Seat position ____ detent positions rearward of full forward

(full forward is position zero)

_X_ 2.15 If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level +/- 0.5 degrees. If head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9 and S16.3.3.1.10) (Check All That Apply)

____ Seat back not adjustable

____ Seat back not independent of driver side seat back

_X_ Head Level Achieved. (Check all that apply)

_X_ Head leveled using the adjustable seat back

____ Head leveled using the neck bracket.

Head Angle _0_____ degrees

____ Head Level NOT Achieved. (Check all that apply)

____ Head leveled using the adjustable seat back

____ Head leveled using the neck bracket.

Head Angle _____ degrees

_X_ 2.16 Verify the pelvis is not interfering with the seat bight. (S16.3.3.1.9)

_X_ 2.17 Verify the dummy abdomen is properly installed. (S16.3.3.1.9)

_X_ 2.18 Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees +/- 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference. (S16.3.3.1.11)

_X_ Pelvic angle set to 20.0 degrees +/- 2.5 degrees.

____ Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.

_X_ Record the pelvic angle. _21.3_____ degrees

_X_ 2.19 Verify the transverse instrument platform of the dummy head is level +/- 0.5 degrees. Use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9, S16.3.3.1.10, and S16.3.3.1.11)

_X_ Head Level Achieved

Head Angle _0_____ degrees

____ Head Level NOT Achieved.

Head Angle _____ degrees

_X_ 2.20 Check the dummy for contact with interior after completing adjustments. (S16.3.3.1.12)

____ N/A Bench Seat

_X_ No contact.

____ Dummy in contact with interior.

____ Seat moved aft ____ mm from previous position.

____ Seat moved aft ____ detent positions from the previous position.

_X_ 2.21 Check the dummy to see if additional interior clearance is obtained, allowing the seat to be moved forward. (S16.3.3.1.12)

____ N/A Bench Seat

_X_ N/A Seat already at full forward position.

____ Clearance unchanged. No adjustments required.

____ Additional clearance available

____ Seat moved Forward ____ mm from the previous position.

____ Seat moved Forward ____ detent positions from the previous position.

____ Seat moved Forward. Full Forward position reached.

X 2.22 Passenger foot positioning. (Indicate final position achieved) (S16.3.3.2)

____ 2.22.1 Place feet flat on the toe board. OR

X 2.22.2 If the feet cannot be placed flat on the toe board, set the feet perpendicular to the lower leg, and rest the heel as far forward on the floor pan as possible. OR

____ 2.22.3 If the heels do not touch the floor pan, set the legs to vertical and set the feet parallel to the floor pan

X 2.23 Passenger arm/hand positioning. (S16.3.3.3)

X 2.23.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)

X 2.23.2 Place the palms of the dummy in contact with the outer part of the thighs (S16.3.3.3.2)

X 2.23.3 Place the little fingers in contact with the seat cushion. (S16.3.3.3.3)

X 2.24 Adjustable head restraints

____ 2.24.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)

X N/A Vehicle does not contain automatic head restraints.

X 2.24.2 Adjust the head restraint to its lowest position. (S16.3.4.2)

X 2.24.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust the head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)

Vertical height of head restraint 203 mm

Mid-point height 101.5 mm

X 2.24.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)

____ N/A midpoint position attained in previous step

X Head rest set at nearest detent below the head CG - Full Down

X 2.24.5 If the head restraint has a fore and aft adjustment, place the restraint in the forwardmost position or until contact with the head is made, whichever occurs first. (S16.3.4.4) No adjustment

X 2.25 Driver and passenger manual belt adjustment (for tests conducted with a belted dummy) S16.3.5

X 2.25.1 If an adjustable seat belt D-ring anchorage exists, place it in the manufacturer's design position for a 5th percentile adult female. This information will be supplied by the COTR.

Manufacturer's specified position Fixed

Actual Position Fixed

X 2.25.2 Place the Type 2 manual belt around the test dummy and fasten the latch. (S16.3.5.2)

X 2.25.3 Ensure that the dummy's head remains as level as possible. (S16.3.5.3)

X 2.25.4 Remove all slack from the lap belt. Pull the upper torso webbing out of the retractor and allow it to retract; repeat this operation four times. Apply a 9 N (2 lbf) to 18 N (4 lbf) tension load to the lap belt. If the belt system is equipped with a tension-relieving device, introduce the maximum amount of slack into the upper torso belt that is recommended by the manufacturer. If the belt system is not equipped with a tension-relieving device, allow the excess webbing in the shoulder belt to be retracted by the retractive force of the retractor. (S16.3.5.4)

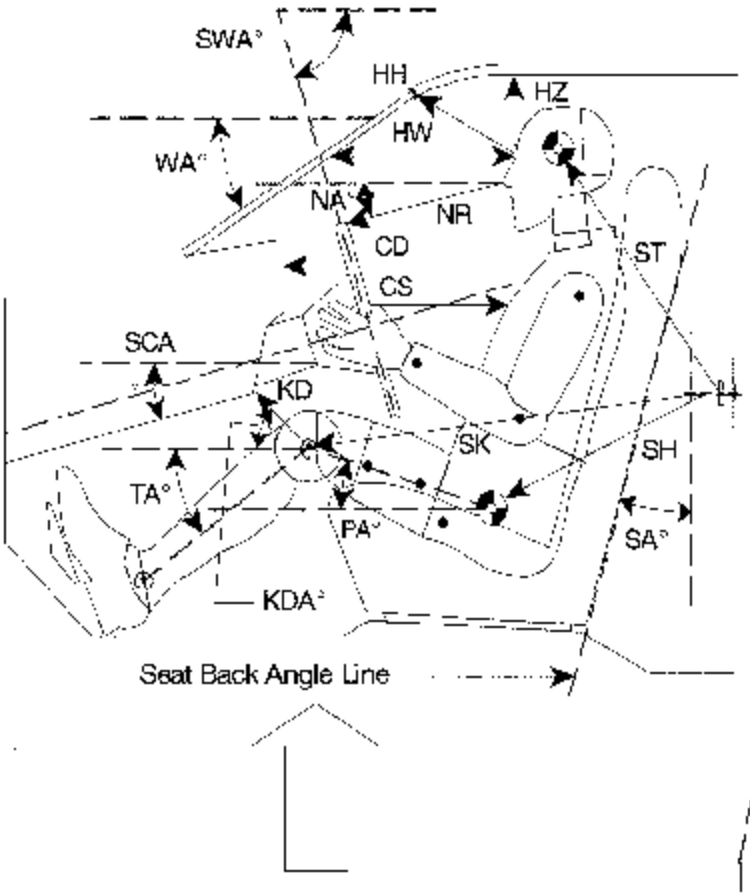
DATA SHEET 31

DUMMY POSITIONING MEASUREMENTS

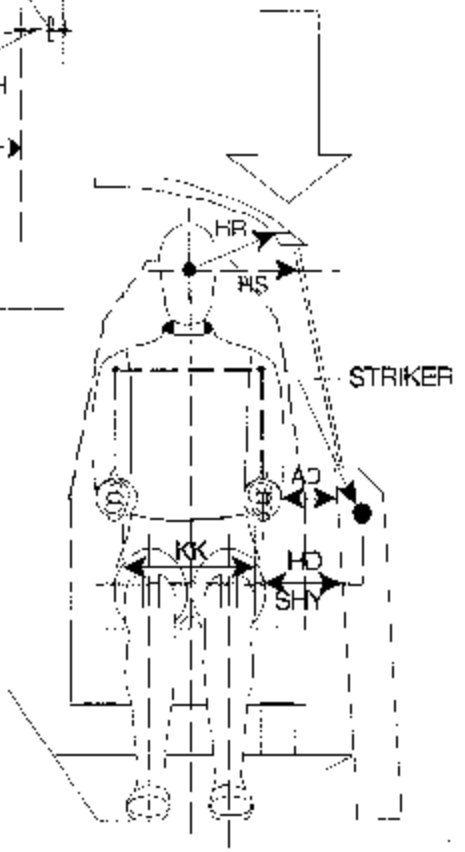
	DRIVER (Serial No. 421)	PASSENGER (Serial No. 426)
WA°	40.0	
SWA°	21.1	NA
SCA°	68.9	NA
SA°	9.7[1]	10.4[1]
HZ	335	345
HH	413	449
HW	671	663
HR	310	300
NR	265 ANGLE 4.0°	NA
CD	475	389
CS	230	NA
RA	99	NA
KDL	95 Angle 61.9°	85 Angle 66.1°
KDR	98	88
PA°	21.6	21.3
TA°	53.9	61.0
KK	230	165
ST	637 ANGLE -55.3°	625 ANGLE -56.6°
SK	800 ANGLE 1.2°	800 ANGLE -0.1°
SH	470 ANGLE 8.5°	466 ANGLE 11.2°
SHY	245	270
HS	301	275
HD	190	201
AD	175	102

[1] Measured on head restraint post.

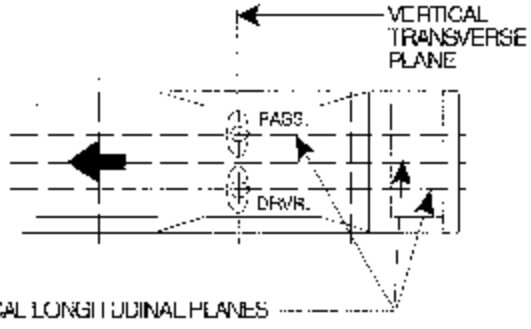
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



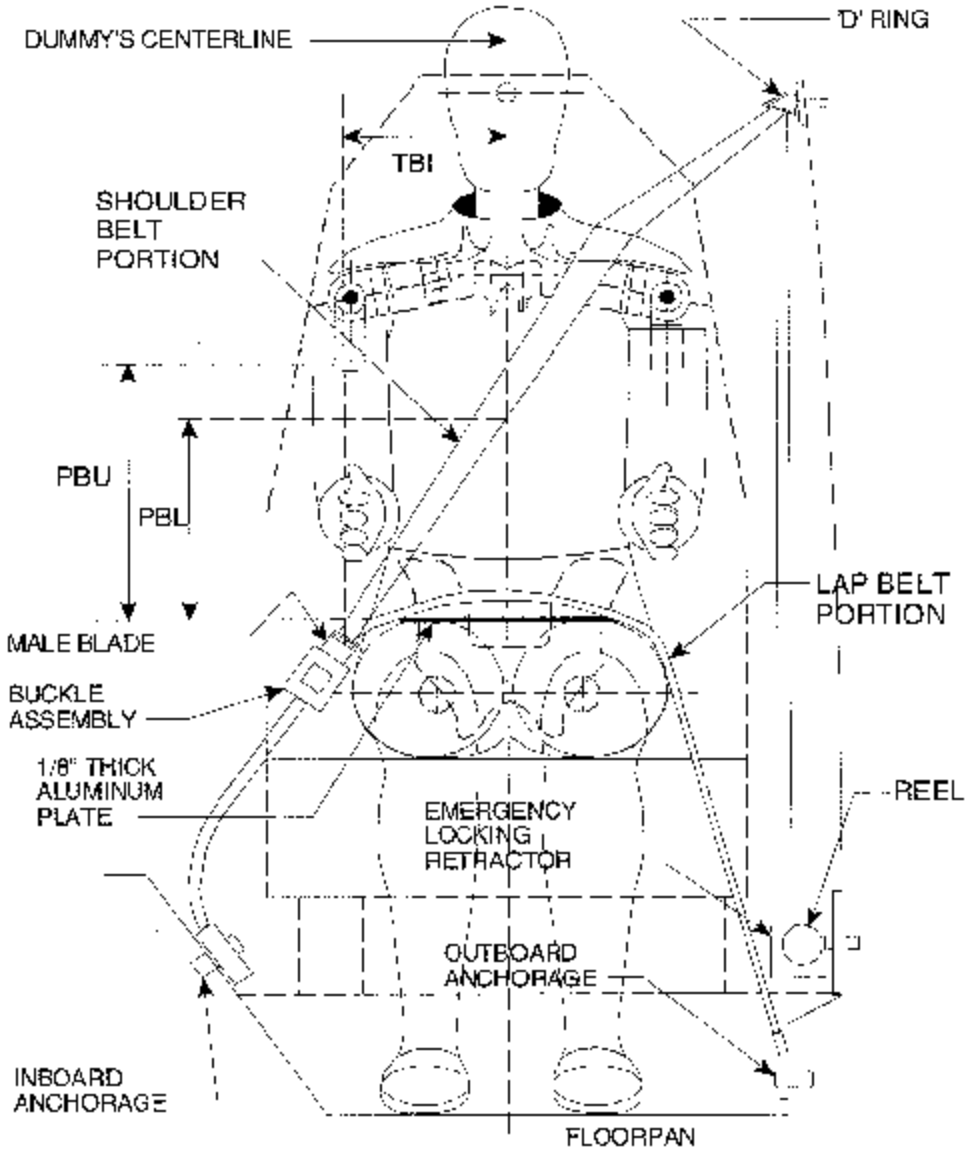
AD - Arm to Door
HD - H-Point to Door
HR - Head to Side Header
HS - Head to Side Window
KK - Knee to Knee
SHY- Striker to H-Point (Y Direction)



CD - Chest to Dash
CS - Steering Wheel to Chest
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
KDA- Knee to Dash Angle
KDL- Left Knee to Dash
KDR- Right Knee to Dash
NA - Nose to Rim Angle
NR - Nose to Rim
PA - Pelvic Angle
RA - Rim to Abdomen
SA - Seat Back Angle
SCA- Steering Column Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
SWA- Steering Wheel Angle
TA - Tibial Angle
WA - Windshield Angle



SEAT BELT POSITIONING DATA



FRONT VIEW OF DUMMY

DESCRIPTIONS OF DUMMY MEASUREMENTS

When a level is to be used, it is to ensure that the line containing the two points described is either parallel or perpendicular to the ground. If a measurement to be made is less than 10 inches ignore the directions to use a level and approximate a level measurement. Also, when a measurement is to be taken to or from the center of a bolt on the dummy, take the measurement from the center of the bolt hole if the bolt is recessed.

The following measurements are to be made within a vertical longitudinal plane.

* HH — Head to Header, taken from the point where the dummy's nose meets his forehead (between his eyes) to the furthest point forward on the header.

* HW — Head to Windshield, taken from the point where the dummy's nose meets his forehead (between his eyes) to a point on the windshield. Use a level.

HZ — Head to Roof, taken from the point where the dummy's nose meets his forehead (between his eyes) to the point on the roof directly above it. Use a level.

* CS — Steering Wheel to Chest, taken from the center of the steering wheel hub to the dummy's chest. Use a level.

* CD — Chest to Dash, place a tape measure on the tip of the dummy's chin and rotate five inches of it downward toward the dummy to the point of contact on the transverse center of the dummy's chest. Measure from this point to the closest point on the dashboard either between the upper part of the steering wheel between the hub and the rim, or measure to the dashboard placing the tape measure above the rim, whichever is a shorter measurement. See photograph.

RA — Steering Wheel Rim to Abdomen, taken from the bottommost point of the steering wheel rim horizontally rearward to the dummy. Use a level.

NR — Nose to Rim, taken from the tip of the dummy's nose to the closest point on the top of the steering wheel rim. Also indicate the angle this line makes with respect to the horizontal (NA).

*[1] KDL, KDR — Left and Right Knees to Dashboard, taken from the center of the knee pivot bolt's outer surface to the closest point forward acquired by swinging the tape measure in continually larger arcs until it contacts the dashboard. Also reference the angle of this measurement with respect to the horizontal for the outboard knee (KDA). See photograph.

SH, SK, ST — Striker to Hip, Knee, and Head, these measurements are to be taken in the X-Z plane measured from the forward most center point on the striker to the center of the H-point, outer knee bolt, and head target. When taking this measurement a firm device that can be rigidly connected to the striker should be used. Use a level. The angles of these measurements with respect to the

* Measurement used in Data Tape Reference Guide

[1] Only outboard measurement is referenced in Data Tape Reference Guide

horizontal should also be recorded. The measurement in the Y (transverse) direction from the striker to the H-point should also be taken (SHY). See photograph.

The following measurements are to be made within a vertical transverse plane.

HS — Head to Side Window, taken from the point where the dummy's nose meets his forehead (between his eyes) to the outside of the side window. In order to make this measurement, roll the window down to the exact height that allows a level measurement. Use a level. See photograph.

* AD — Arm to Door, taken from the outer surface of the elbow pivot bolt on a Hybrid II dummy to the first point it hits on the door. In the case of a Hybrid III dummy, measure from the bolt on the outer biceps. When a SID is used make the measurement from the center of the bottom of the arm segment where it meets the dummy's torso.

* HD — H-point to Door, taken from the H-point on the dummy to the closest point on the door. Use a level.

* HR — Head to Side Header, measure the shortest distance from the point where the dummy's nose meets his forehead (between his eyes) to the side edge of the header just above the window frame, directly adjacent to the dummy.

SHY — Striker to H-point, taken from a rod rigidly connected to the forward most center point on the striker to the H-point. Use a level. See photograph.

KK — Knee to Knee, for Hybrid II dummies measure the distance between knee pivot bolt head outer surfaces. For Hybrid III dummies measure the distance between the outboard knee clevis flange surfaces. (This measurement may not be exactly transverse)

ANGLES

SA — Seat Back Angle, find this angle using the instructions provided by the manufacturer. If the manufacturer doesn't provide clear instructions contact the COTR.[2]

PA — Pelvic or Femur Angle, taken by inserting the pelvic angle gauge into the H-point gauging hole on the SID or the Hybrid III dummies and taking this angle with respect to the horizontal. Measure the angle of the line connecting the H-point hole and the outer knee pivot bolt hole on a Hybrid II dummy with respect to the horizontal, to find the femur angle.

SWA — Steering Wheel Angle, find this by placing a straight edge against the steering wheel rim along the longitudinal plane. Then measure the acute angle of the straight edge with respect to the horizontal.

* Measurement used in Data Tape Reference Guide

[1] Only outboard measurement is referenced in Data Tape Reference Guide

[2] For this test, the measurement was taken on head restraint post per COTR.

SCA	Steering Column Angle, measured with respect to the horizontal by placing an inclinometer on the center of the underside of the steering column.
NA	Measure the angle made when taking the measurement NR with respect to the horizontal.
KDA	Knee to Dash Angle, the angle that the measurement KD is taken at with respect to the horizontal. Only get this angle for the outboard knee. See photograph.
WA	Windshield Angle, place an inclinometer along the transverse center of the windshield exterior (measurement is made with respect to horizontal).
TA	Tibia Angle, use a straight edge to connect the dummy's knee and ankle bolts. Then place an inclinometer on the straight edge and measure the angle with respect to the horizontal.

DATA SHEET 32
CRASH TEST

NHTSA No.: C30104 Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle, B. Miller

Impact Angle: 0° Belted Dummies: X Yes ___ No

Test Speed: ___ 32 to 40 km/h X 0 to 48 km/h ___ 0 to 56 km/h

Driver Dummy: X 5th female ___ 50th male Passenger Dummy: X 5th female ___ 50th male

X 1. Vehicle underbody painted
X 2. The speed measuring devices are in place and functioning.
X 3. The speed measuring devices are 1.5 m from the barrier (spec. 1.5m) and 30 cm from the barrier (spec. is 30 cm)
X 4. Convertible top is in the closed position.
X N/A – Not a convertible
X 5. Instrumentation and wires are placed so the motion of the dummies during impact is not affected.
X 6. Tires inflated to pressure on tire placard or if it does not have a tire placard because it is not a passenger car, then inflated to the tire pressure specified in the owner information.
241 kPa front left tire 240 kPa specified on tire placard or in owner information
241 kPa front right tire 240 kPa specified on tire placard or in owner information
241 kPa rear left tire 240 kPa specified on tire placard or in owner information
241 kPa rear right tire 240 kPa specified on tire placard or in owner information
X 7. Time zero markers and switches in-place.
X 8. Pre test zero and shunt calibration adjustments performed and recorded
X 9. Dummy temperature meets requirements of section 12.2 of the test procedure.
X 10. Vehicle hood closed and lauched
X 11. Transmission placed in neutral
X 12. Parking brake off
X 13. Ignition in the ON position
X 14. Doors closed and latched but not locked.
X 15. Postiest zero and shunt calibration checks performed and recorded
X 16. Actual test speed 40.0 _ km/h
X 17. Vehicle rebound from the barrier NA cm
X 18. Describe whether the doors open after the test and what method is used to open the doors.
Left front door Easy
Right front door Easy
Left rear door Easy
Right rear door Easy
X 19. Describe the contact points of the dummy with the interior of the vehicle.
Driver dummy Head contacted steering wheel and head restraint. Abdomen contacted steering wheel. Both knees contacted knee bolster.
Passenger dummy Head contacted grab handle on instrument panel and head restraint. Both knees contacted the glove box.

DATA SHEET 33
Offset Deformable Barrier Test Using Belted 5th Percentile Female Dummies (Part 572, Subpart O) (S18)

NHTSA No.: C30104 Test Date: 11/14/02

Laboratory: TRC Inc. Test Technician(s): M. Postle

Test Number: 021114 Barrier Serial Number: 053A0402/098B0502

Driver Dummy Serial Number: 421 Passenger Dummy Serial Number: 426

Vehicle Speed X 40 km/h Offset 40 Percent

1.0 Pre-Test Activities

X 1.1 Complete the following data sheets
- X 1.1.1 Vehicle Receiving and Inspection
- X 1.1.2 Vehicle Weight, Fuel Tank, and Attitude
- X 1.1.3 Vehicle Accelerometer Location
- X 1.1.4 General Test Vehicle Data
- X 1.1.5 Photographic Targets
- X 1.1.6 Camera Locations
- X 1.1.7 5th Percentile Female Dummy Calibration
- X 1.1.8 Appendix G 5th Percentile Female Dummy Seating and Positioning Procedure

X 1.2 Barrier Certification
- X 1.2.1 Verify the offset deformable barrier materials and construction are certified to Subpart C of 49 CFR 587. (Attach vendor certification sheets to this data sheet.)

X 1.3 Verify barrier measurements and complete the table below. (See Figure 1)

	Specified Dimension in mm +/- 2.5 unless specified	Measured Dimension in mm
Main Body Height RH Side	650	650
Main Body Height LH Side	650	651
Floor to Lower Barrier LH	200 +/- 15	200
Floor to Lower Barrier RH	200 +/- 15	203
Main Body Width	1000	999
Bumper Element Width	1000	1000
Bumper Element Height LH	330	329
Bumper Element Height RH	330	330
Main Body Depth LH	450	451
Main Body Depth RH	450	450
Bumper Element Depth LH	90	90
Bumper Element Depth RH	90	91
Upper Slot Location	220	221
Lower Slot Location	110	108
Upper Slot Width	4mm Max	3
Lower Slot Width	4mm Max	3

X 1.3.1 All Dimensions within specified tolerance
X Yes

X 1.4 Verify deformable barrier mounted using 10 bolts (8mm diameter minimum) and the steel strips specified. See Section 4.0, Discussion of Test Results.

X 1.5 Verify height of Fixed Rigid Barrier relative to vehicle being tested.

X 1.6 Photograph pre-test condition. Include photograph shown below.

- X Pre-test frontal view of test vehicle
- X Pre-test left side view of test vehicle
- X Pre-test right side view of test vehicle
- X Pre-test left front three-quarter view of test vehicle
- X Pre-test right rear three-quarter view of test vehicle
- X Pre-test windshield view
- X Pre-test engine compartment view
- X Pre-test fuel filler cap view
- X Pre-test front underbody view
- X Pre-test rear underbody view
- X Pre-test driver dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat.
- X Frontal Pre-test driver dummy position with the camera in the same plane as the longitudinal centerline of the dummy.
- X Pre-test passenger dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat
- X Frontal Pre-test passenger dummy position view with the camera in the same plane as the longitudinal centerline of the dummy.
- X Dummy contact point(s) (vehicle and dummy)
- X Pre-test view of the knee bolsters.
- ____ Pre-test view of the steering column shear capsule if any part of it is visible. Do NOT disassemble any parts to take these photographs.
- X Pre-test under hood view of the steering column intersecting the fire wall. Take the best photograph possible without removing any parts.
- X Pre-test view of the steering column intersecting the firewall from inside the vehicle. Take the best photograph possible without removing any parts.

2.0 Test Execution

X 2.1 Impact vehicle into offset deformable barrier at a speed of 25 km/hr +0/-2 km/hr

Record Impact speed Trap 1 40.0 km/hr
Trap 2 40.0 km/hr
Trap Location (prior to impact) 51.0 mm
____ Speed at impact 40 km/hr +0 / -2 km/hr X Yes ___ No

X 2.2 Strike barrier at offset of 10% of vehicle width +/- 50mm from the vehicle centerline.

Vehicle Width 1994 mm
Required Offset 199.4 mm
Actual Measured Offset 197.4 mm
X Offset within +0 / -50 mm X Yes ___ No

X 2.3 Vehicle attitude at impact 0.0 degrees +/- 5 degrees

Impact angle 0 degrees
____ Impact angle 0.0 / -5 degrees X Yes ___ No

3.0 Post Test Activities

X 3.1 Photograph post-test condition. Include photograph shown below.

- X Post test frontal view of test vehicle
- X Post test left side view of test vehicle
- X Post test right side view of test vehicle
- X Post test left front three-quarter view of test vehicle
- X Post test right rear three-quarter view of test vehicle
- X Post test windshield view
- X Post test engine compartment view

X Post test fuel filler cap view
X Post test front underbody view
X Post test rear underbody view
X Post test driver dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat.
X Frontal post test driver dummy position with the camera in the same plane as the longitudinal centerline of the dummy.
X Post test passenger dummy position with the door open and with the camera perpendicular to the longitudinal centerline of the vehicle and in line with the markings showing the fore-aft position of the seat
X Frontal post test passenger dummy position view with the camera in the same plane as the longitudinal centerline of the dummy.
X Dummy contact point(s)(vehicle and dummy)
X Post test view of the knee bolsters.
____ Post test view of the steering column shear capsule if any part of it is visible. Do NOT disassemble any parts to take these photographs.
X Post test under hood view of the steering column intersecting the fire wall. Take the best photograph possible without removing any parts.
X Post test view of the steering column intersecting the fire wall from inside the vehicle. Take the best photograph possible without removing any parts.
____ Post test Stoddard solvent spillage location view, if required.
____ Post test electrolyte spillage location view, if required.
X Post test top view of test vehicle while vehicle is on static rollover machine. (If applicable)

X 3.2 Process data channels per section 11.14 and record injury values in the Table.

	FMVSS 208 Maximum Allowable Injury Assessment Value	**Measured Value Driver** Dummy Serial No. 421	**Measured Value Passenger** Dummy Serial No. 426
HIC_{15}	700	262	290
Chest Acceleration	60 g	20.2 g	22.8 g
Chest Displacement	52 mm	20 mm	13 mm
Peak Nij (Nte)	1.0	0.40	0.35
Time (ms)	NA	125.76 ms	121.68 ms
Peak Nij (Ntf)	1.0	0.08	0.28
Time (ms)	NA	147.20 ms	147.92 ms
Peak Nij (Nce)	1.0	0.02	0.03
Time (ms)	NA	43.36 ms	58.80 ms
Peak Nij (Ncf)	1.0	0.10	0.28
Time (ms)	NA	200.16 ms	150.48 ms
Neck Tension (Fz)	2620 N	782 N	1059 N
Neck Compression (Fz)	2520 N	140 N	55 N
Left Femur Compression	6805 N	3320 N	1398 N
Right Femur Compression	6805 N	1241 N	1244 N

All injury Criteria within limits
X Pass
____ Fail

X 3.3 Perform post-test calibration check.

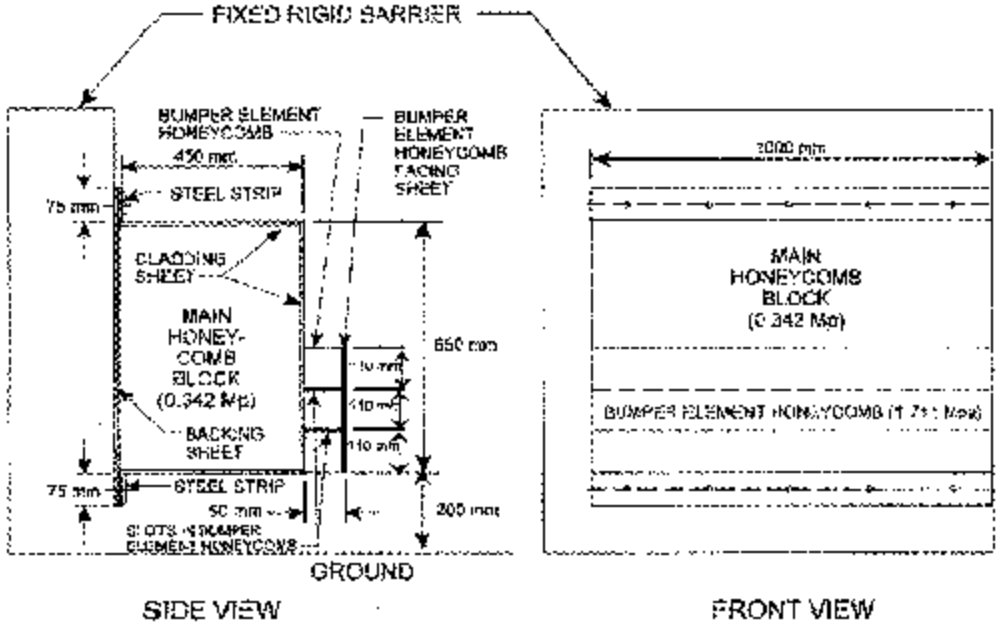


FIGURE 1
OFFSET BARRIER

PLASCORE

OFFSET FRONTAL BARRIER CERTIFICATION

Date: October 31, 2002

To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

Customer P.O. Number:	VERBAL
Work Order Number:	14853
Quantity:	01 piece

CORE INFORMATION

Core Type:	PCGA-1.8-3/4-P-3003-T
Cell Size:	0.750 inches
Density:	1.8 pcf
Unit Number:	098B0502

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 49.59 psi +0, -10% per DWG #WG11.

Quality Control Representative
Karl D. Zwaanstra

PLASCORE, INC. • 615 N. FAIRVIEW ST. • ZEELAND, MI 49464-0170 • PHONE: (616) 772-1220 • FAX: (616) 772-1255
WEBSITE: www.plascore.com • EMAIL: info@plascore.com

021114

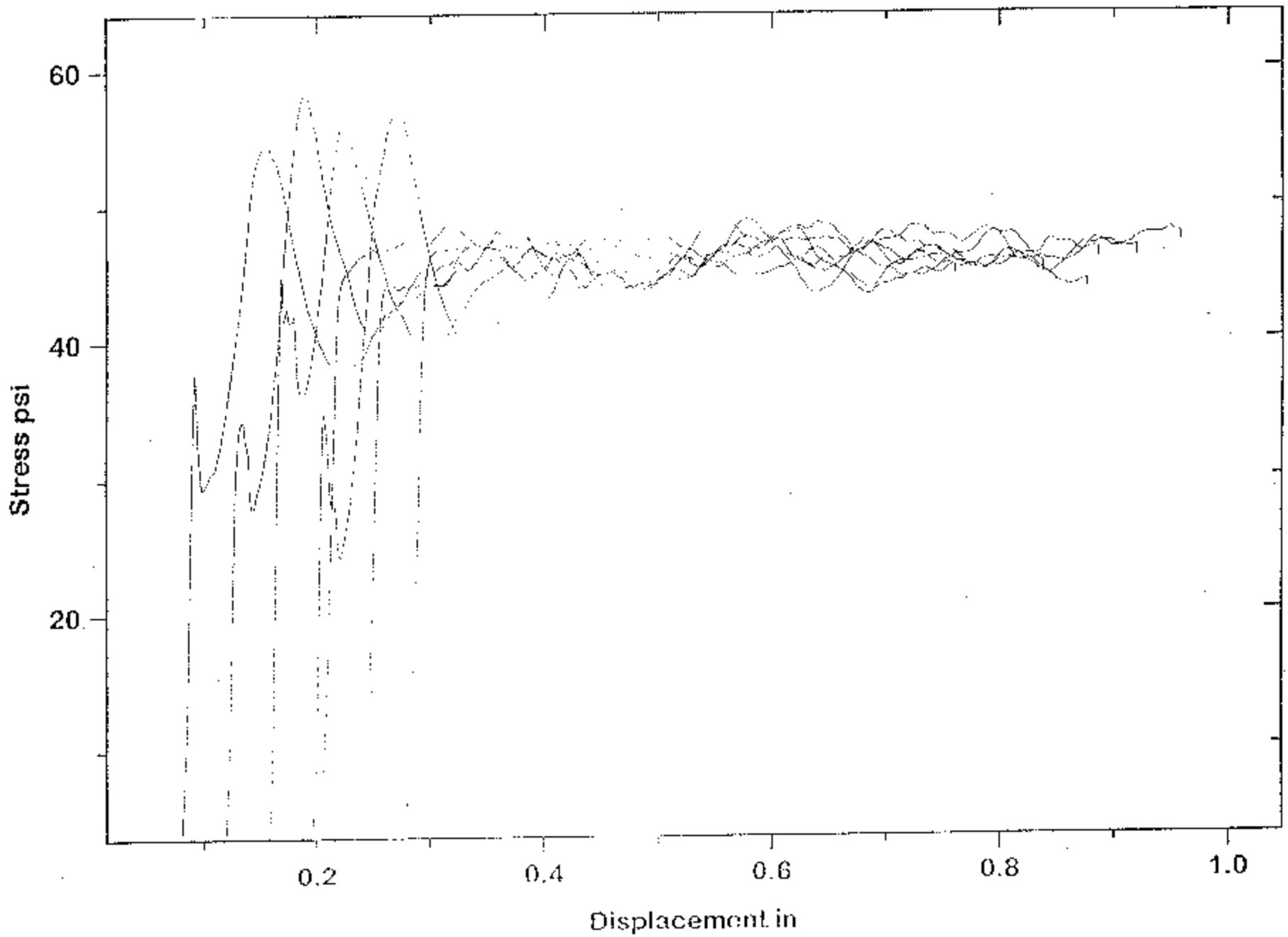
PLASCORE

Crush Data
49.59 psi +0, -10% psi per DWG #WG11

Block Number: **098B0502**

Specimen Number	Zone 1	Zone 2	Zone 3
1	45.28	45.24	45.69
2	45.08	47.31	47.26
3	45.00	46.16	47.63
4	45.03	45.79	46.73
5	47.14	46.94	45.42
6	46.56	45.58	45.50
7	46.04	46.08	46.10

BLOCK # 098B0502 Sample ID: IN224500



PLASCORE

OFFSET FRONTAL BARRIER CERTIFICATION

Date: October 31, 2002

To: Transportation Research
Ship & Rec Bldg 50
10820 St. Route 347
East Liberty, OH 43319-0367

PURCHASE ORDER INFORMATION

Customer P.O. Number: VERBAL
Work Order Number: 14853
Quantity: 01 piece

CORE INFORMATION

Core Type: PCGA-1/4-5.2-P-3003-T
Measured Cell Size: 0.250 inches
Measured Density: 5.2 pcf

Unit Number: 053A0402

This is to certify that the aluminum honeycomb core supplied, under the unit number provided, meets the crush requirements of 248.1 psi +0, -10% psi per DWG #WG11.

QA Plascore Accept 201

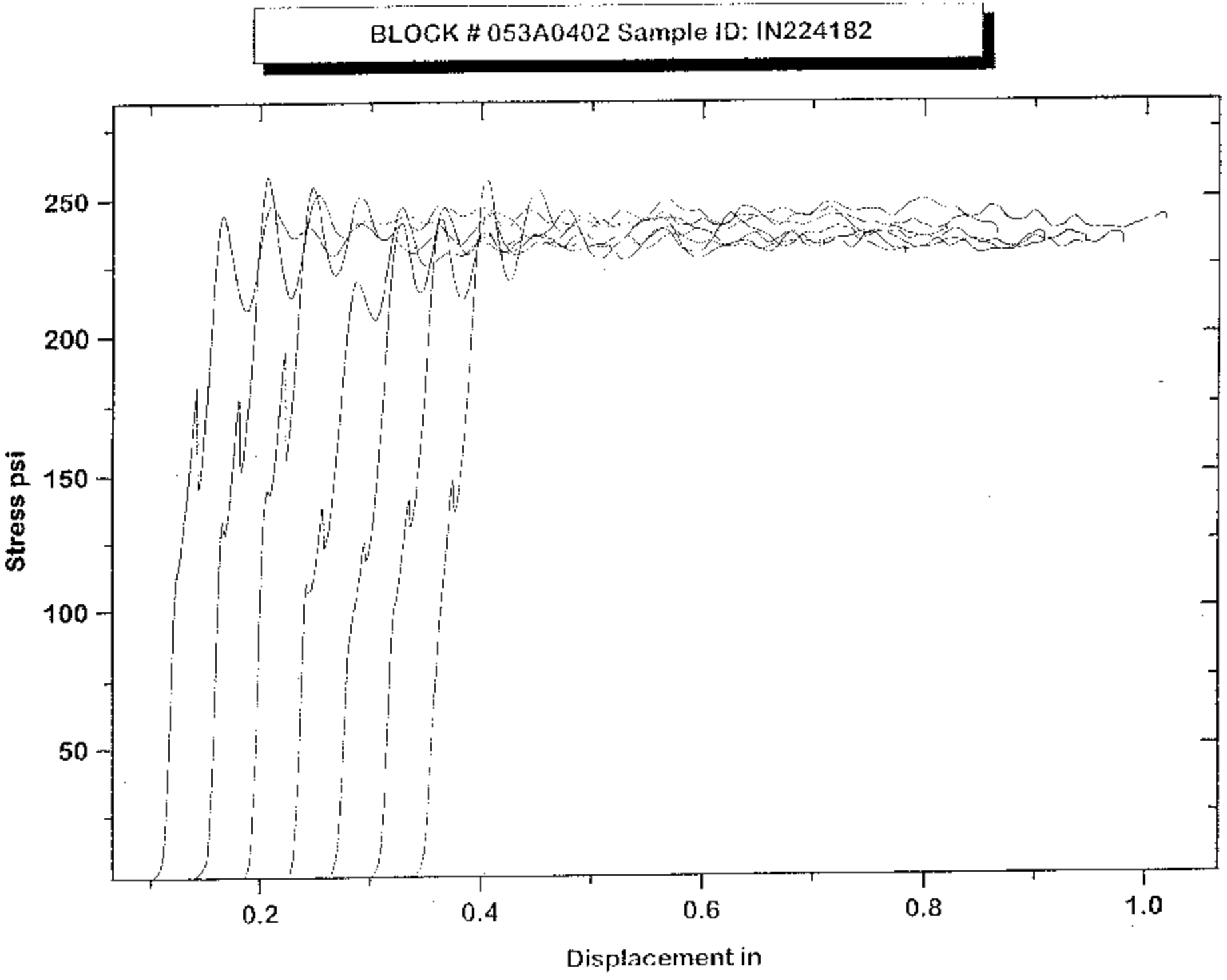
Quality Control Representative
Karl D. Zwaanstra

PLASCORE

Crush Data
248.1 psi +0, -10% psi per DWG #WG11

Block Number: 053A0402

Specimen Number	Zone 1	Zone 2	Zone 3
1	234.32	234.34	233.15
2	240.03	241.88	241.78
3	241.42	241.30	239.35
4	232.07	233.20	233.82
5	238.06	236.19	233.80
6	235.70	233.91	233.08
7	244.58	245.55	241.24


BLOCK # 053A0402 Sample ID: IN224182
Stress psi
250
200
150
100
50
0.2
0.4
0.6
0.8
1.0
Displacement in

021114

DATA SHEET 34
ACCIDENT INVESTIGATION MEASUREMENTS

NHTSA No.: C30104 Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, K. Watkins, S. Sterling

Impact Angle: 0° Belted Dummies: X Yes ___ No

Test Speed: ___ 32 to 40 km/h X 0 to 40 km/h ___ 0 to 48 km/h ___ 0 to 56 km/h

Driver Dummy: X 5th female ___ 50th male Passenger Dummy: X 5th female ___ 50th male

Vehicle Year/Make/Model/Body Style: 2003/Chevrolet/Suburban/MPV

VIN: 3GNEC16Z53G108730

Wheelbase: 3300 ; Build Date: 08/02

Veh. Size Category: MPV ; Test Weight: 2684.3

Front Overhang: 926 ; Overall Width: 1994

Veh. Impact Speed: 40.0 ; Vel. Change:* 49.8

Collision Deformation Classification (CDC) Code: 12FYEW2

* From integration of Left Rear Seat Crossmember X-axis acceleration.

Impact Mode: 40% Offset

Crush Depth Dimensions:

C1 = 450 mm

C2 = 374 mm

C3 = 419 mm

C4 = 189 mm

C5 = -29 mm

C6 = -191 mm

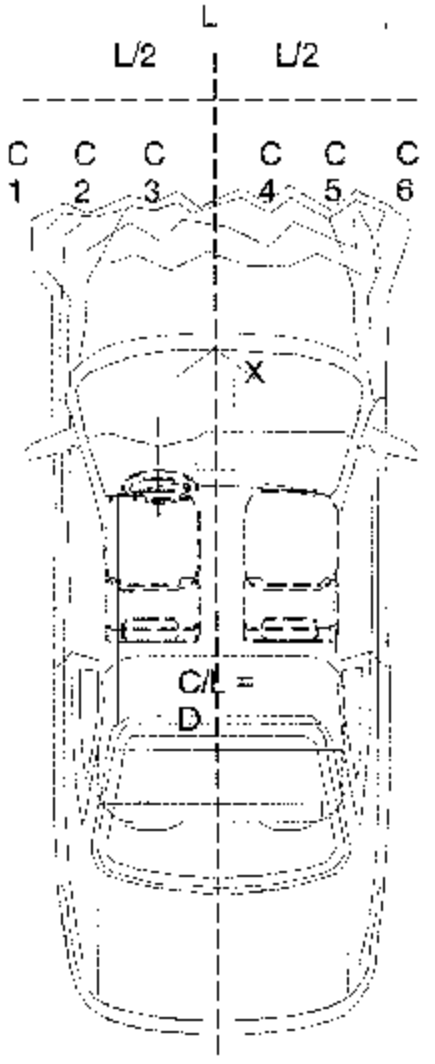
Midpoint of Damage: D= -599

(Left from Vehicle Longitudinal Centerline)

Length of Damage Region:

L = 1830 mm

REMARKS:



DATA SHEET 35
WINDSHIELD MOUNTING (FMVSS 212)

NHTSA No.: C30104 Test Date: 11/12-14/02

Laboratory: TRC Inc. Test Technician(s): R. Benavides, M. Postle

Impact Angle: 0° Belted Dummies: X Yes ____ No

Test Speed: ____ 32 to 40 km/h X 0 to 40 km/h ____ 0 to 48 km/h ____ 0 to 56 km/h

Driver Dummy: X 5th female ____ 50th male Passenger Dummy: X 5th female ____ 50th male

Most vehicle windshields are either bonded in place and covered with chrome or plastic strips or they are held to the body by a rubber retainer. It is difficult to determine the exact periphery of the windshield because the glazing edge is hidden from view. The test engineer will measure the perimeter inside the retainer or molding at several locations. After the impact test the covering over the glazing edge may be removed for exact measurement of the windshield periphery. Do not disturb the molding or retainer in the event of a noncompliance.

X 1. Describe from visual inspection how the windshield is mounted and describe any trim material.
Plastic trim all around the windshield, held by adhesive

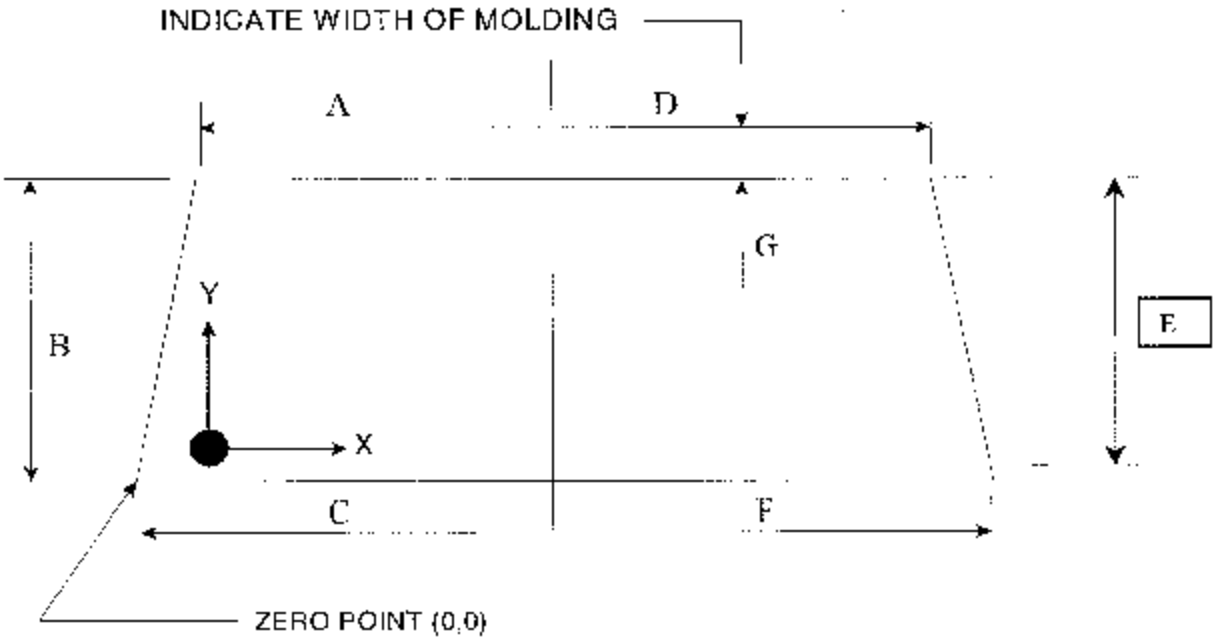
X 2. Mark the longitudinal centerline of the windshield.
X 3. Measure pre-crash A, B, and C for the left side and record in the chart below.
X 4. Measure pre-crash D, E, and F for the right side and record in the chart below.
X 5. Measure from the edge of the retainer or molding to the edge of the windshield.
Dimension G: 18 mm
X 6. Can a single thickness of copier type paper (as small a piece as necessary) slide between the windshield and the vehicle body?
X No, Pass - Skip to the table, complete it by repeating the pre-crash measurements in the post-crash column, and calculate the retention percentage which will be 100%.
____ Yes, go to 7.
____ 7. Visibly mark the beginning and end of the portions of the periphery where the paper slides between the windshield and the vehicle body.
____ 8. Measure and record post-crash A, B, C, D, E, and F such that the measurements do not include any of the parts of the windshield where the paper slides between the windshield and the vehicle body.
____ 9. Calculate and record the percent retention for the right and left side of the windshield.
____ 10. Is total right side percent retention less than 75%?
____ Yes, **FAIL**
____ No, Pass
____ 11. Is total left side percent retention less than 75%?
____ Yes, **FAIL**
____ No, Pass

WINDSHIELD PERIPHERY MEASUREMENT

	Dimension	Pre-crash mm	Post-crash mm	Percent Retention (Post-crash ÷ Pre-crash)
Left side	A	698	698	
	B	670	670	
	C	876	876	
	Total	2244	2244	100
Right side	D	698	698	
	E	670	670	
	F	876	876	
	Total	2244	2244	100

Indicate area of mounting failure: None

FRONT VIEW OF WINDSHIELD



DATA SHEET 36
WINDSHIELD ZONE INTRUSION (FMVSS 219)

NHTSA No.: C30104 Test Date: 11/11-14/02

Laboratory: TRC Inc. Test Technician(s): B. Miller, D. Summers, M. Postle

Impact Angle: 0° Belted Dummies: X Yes ____ No

Test Speed: ____ 32 to 40 km/h X 0 to 40 km/h ____ 0 to 48 km/h ____ 0 to 56 km/h

Driver Dummy: X 5th female ___ 50th male Passenger Dummy: X 5th female ___ 50th male

X 1. Place a 165 mm diameter rigid sphere, with a mass of 6.8 kg on the instrument panel so that it is simultaneously touching the instrument panel and the windshield. (571.219 S6.1(a))

X 2. Roll the sphere from one side of the windshield to the other while marking on the windshield where the sphere contacts the windshield. (571.219 S6.1(b))

X 3. From the outermost contactable points on the windshield draw a horizontal line to the edges of the windshield. (571.219 S6.1(b))

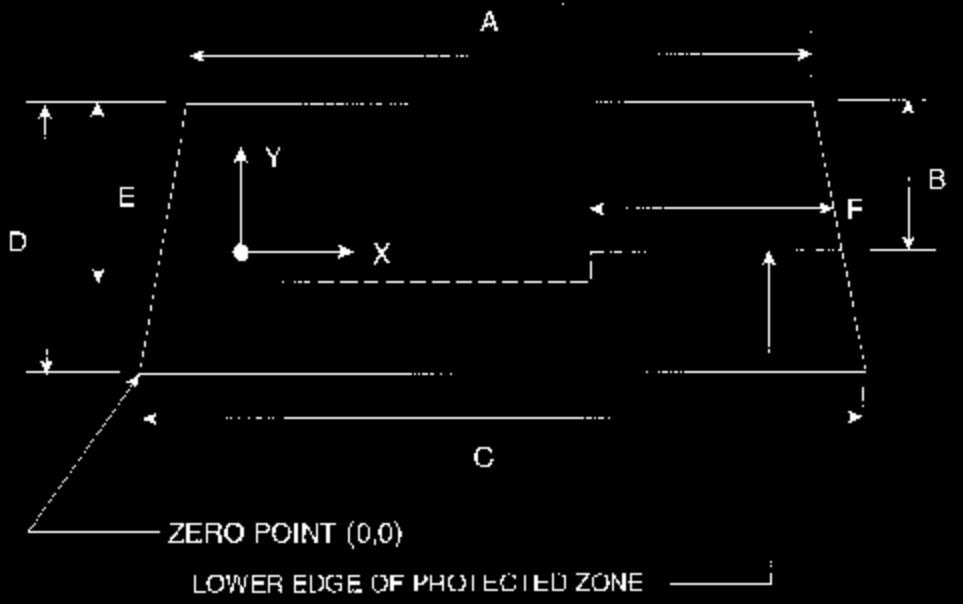
X 4. Draw a line on the inner surface of the windshield that is 13 mm below the line determined in items 2 and 3.

X 5. After the crash test, record any points where a part of the exterior of the vehicle has marked, penetrated, or broken the windshield.

SKETCH OF FRONT VIEW OF WINDSHIELD:

Provide all dimensions necessary to reproduce the protected area.

FRONT VIEW OF WINDSHIELD



A. Windshield Dimensions

A	B	C	D	E	F
1397	360	1753	670	485	935

AREA OF PROTECTED ZONE FAILURES:

B. Provide coordinates of the area that the protected zone was penetrated more than 0.25 inches by a vehicle component other than one which is normally in contact with the windshield.

X	Y

C. Provide coordinates of the area beneath the protected zone template that the inner surface of the windshield was penetrated by a vehicle component

X	Y

REMARKS: No penetration in or beneath the protected zone.

DATA SHEET 37
FUEL SYSTEM INTEGRITY (FMVSS 301)

TEST VEHICLE NHTSA NO.: C30104 ; TEST DATE: 11/14/02

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: M. Postle

TYPE OF IMPACT: 40 % Offset

STODDARD SOLVENT SPILLAGE MEASUREMENT:

A. From impact until vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 28 grams)

B. For 5 minute period after vehicle motion ceases —

Actual = 0 grams. (Maximum Allowable = 142 grams)

C. For next 25 minutes —

Actual = 0 grams . (Maximum Allowable – 28 grams/minute)

D. Provide Spillage Details: None

REMARKS: Test time to start of rollover was 57 minutes; no spillage occurred during the interval.

FMVSS 301 STATIC ROLLOVER DATA SHEET

A. TEST PHASE = 0° TO 90°

Determination of Stoddard Solvent Collection Time Period:

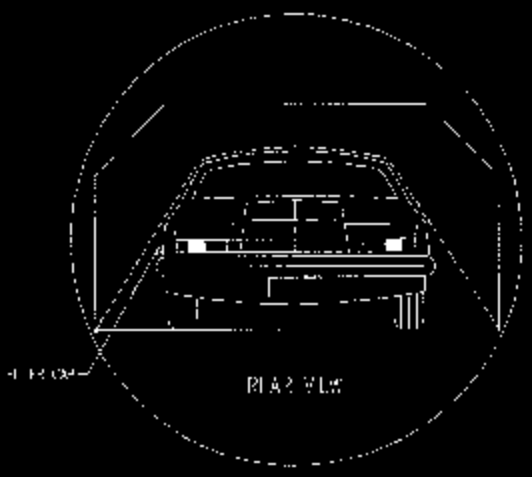
1. Rollover Fixture 90° Rotation Time = _1__ minutes, _30_ seconds

   (Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Held Time – 5 minutes, 0 seconds

3. TOTAL = _6__ minutes, _30_ seconds

4. NEXT WHOLE MINUTE INTERVAL = _7__ minutes



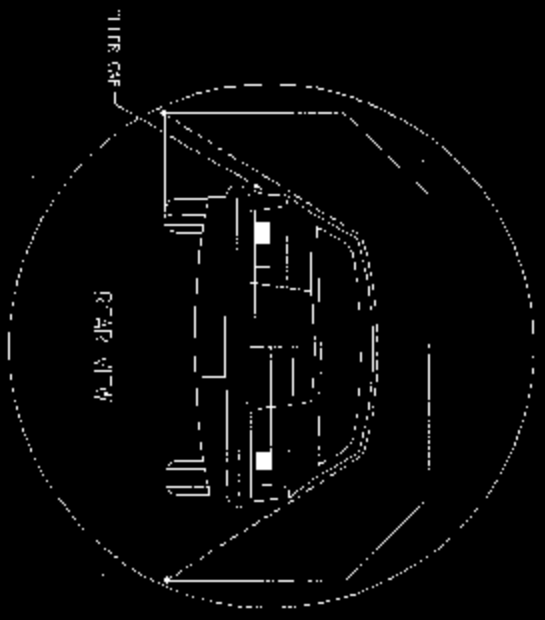
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = _0__ grams (142 grams allowed)

2. 6th minute = _0__ grams (28 grams allowed)

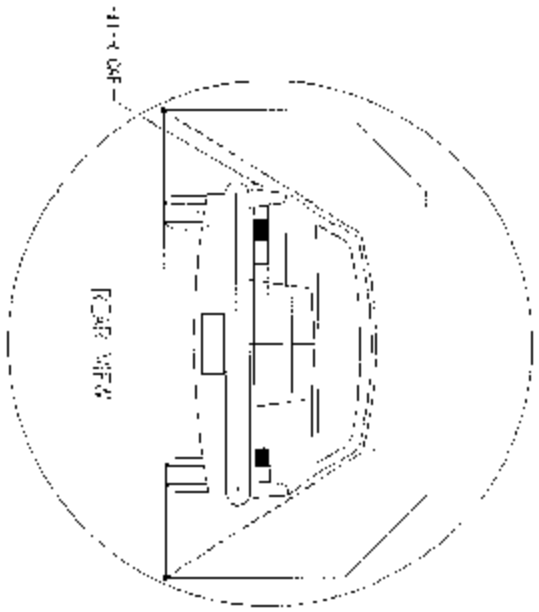
3. 7th minute = _0__ grams (28 grams allowed)

4. 8th minute (if required) = _NA_ grams (28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

B. TEST PHASE – 90° TO 180°



Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time = 1 minutes, 30 seconds

   (Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 30 seconds

4. NEXT WHOLE MINUTE INTERVAL – 7 minutes

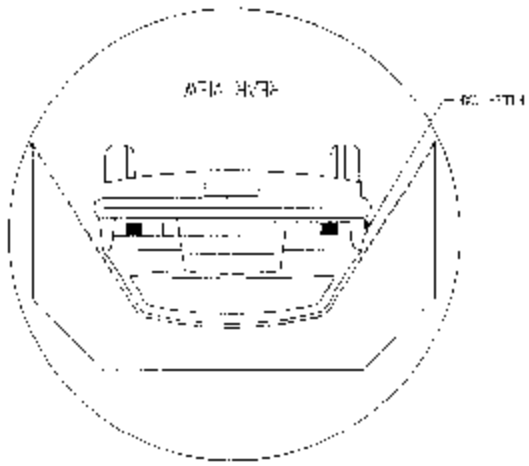
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = 0 grams
   (142 grams allowed)

2. 6th minute = 0 grams
   (28 grams allowed)

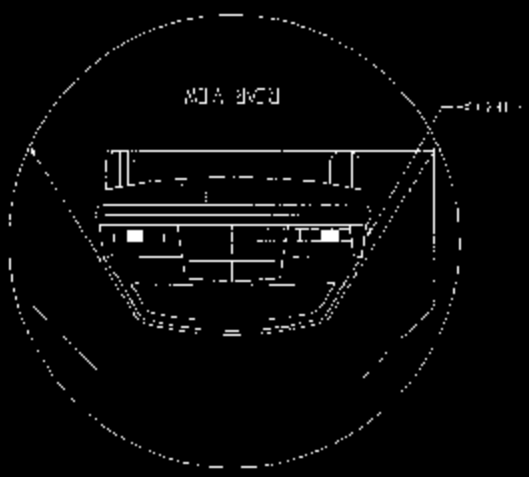
3. 7th minute = 0 grams
   (28 grams allowed)

4. 8th minute (if required) = NA grams
   (28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

C. TEST PHASE = 180° TO 270°



Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90° Rotation Time = 1 minutes, 30 seconds

   (Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 30 seconds

4. NEXT WHOLE MINUTE INTERVAL = 7 minutes

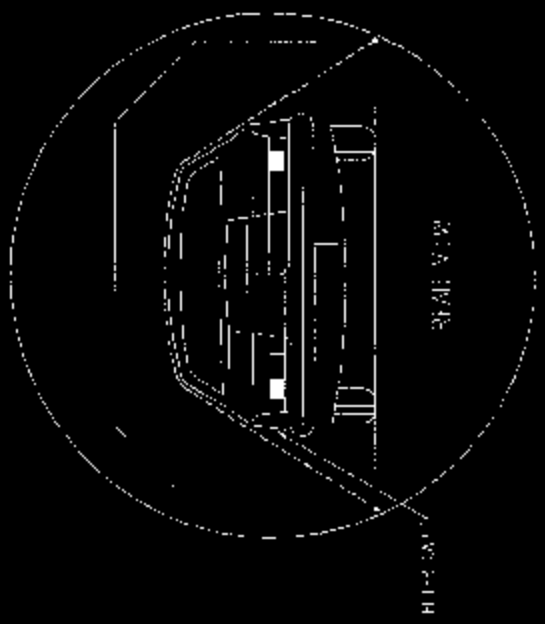
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = 0 grams (142 grams allowed)

2. 6th minute = 0 grams (28 grams allowed)

3. 7th minute = 0 grams (28 grams allowed)

4. 8th minute (if required) = NA grams (28 grams allowed)



Provide Details of Stoddard Solvent Spillage Locations - None

D. TEST PHASE = 270° TO 360°

Determination of Stoddard Solvent Collection Time Period:

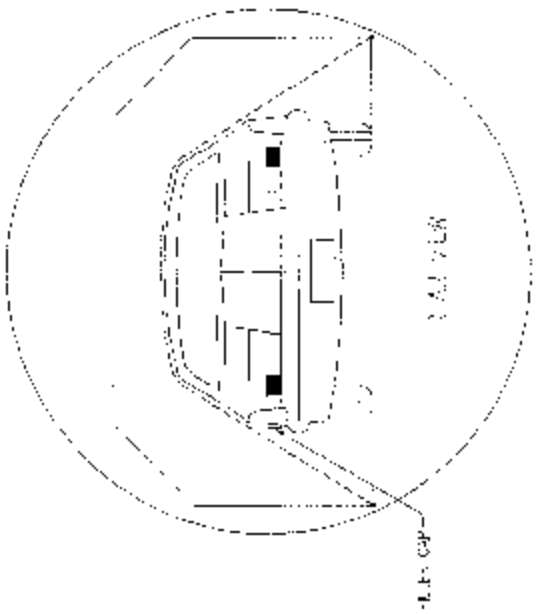
1. Rollover Fixture 90° Rotation Time – 1 minutes, 30 seconds

   (Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time – 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 30 seconds

4. NEXT WHOLE MINUTE INTERVAL = 7 minutes



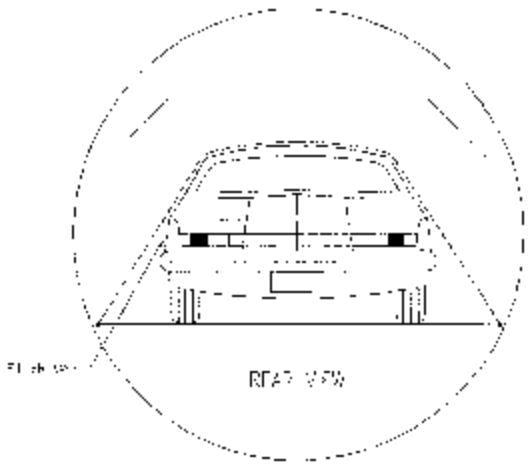
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = 0 grams (142 grams allowed)

2. 6th minute = 0 grams (28 grams allowed)

3. 7th minute – 0 grams (28 grams allowed)

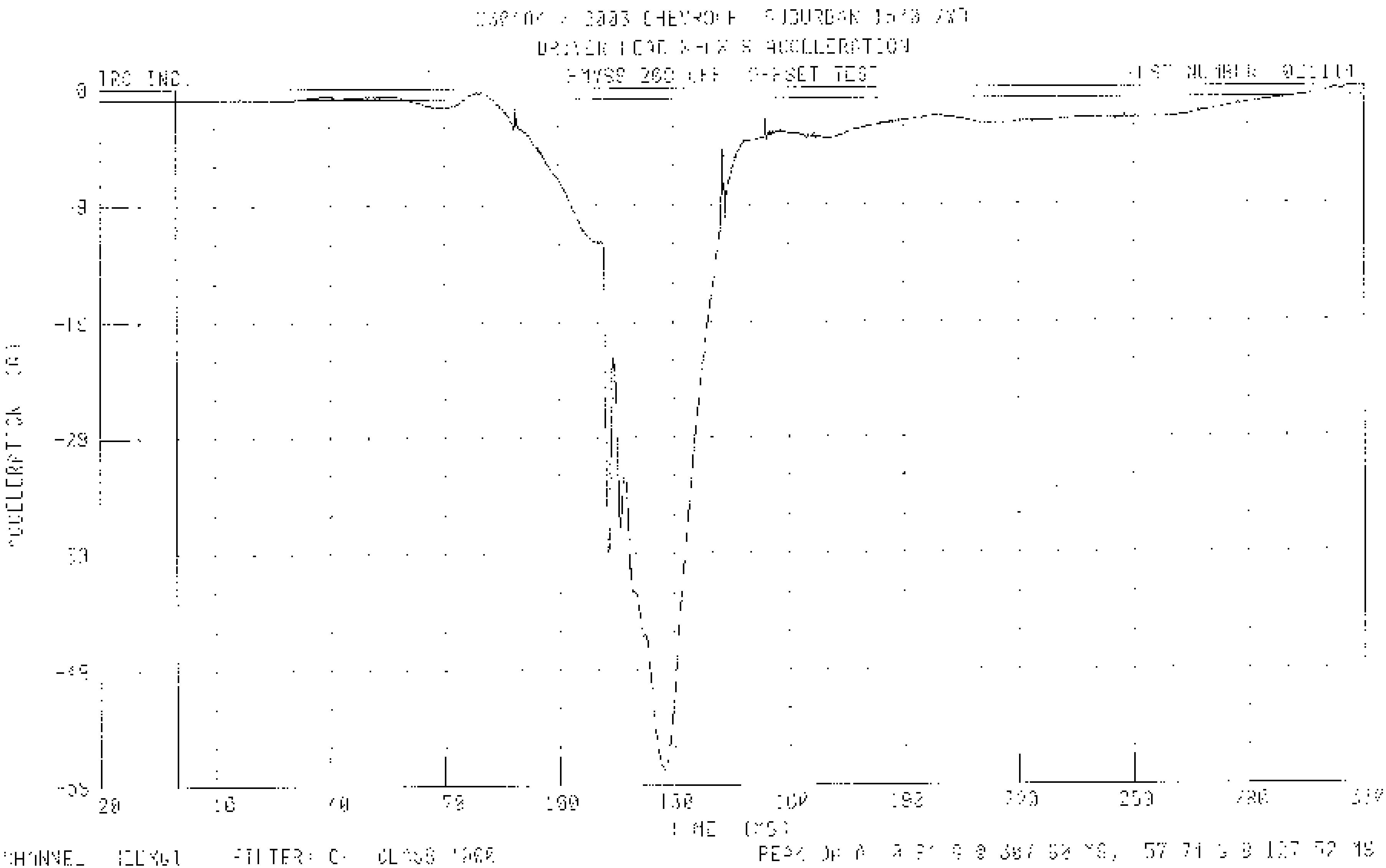
4. 8th minute (if required) – NA grams (28 grams allowed)

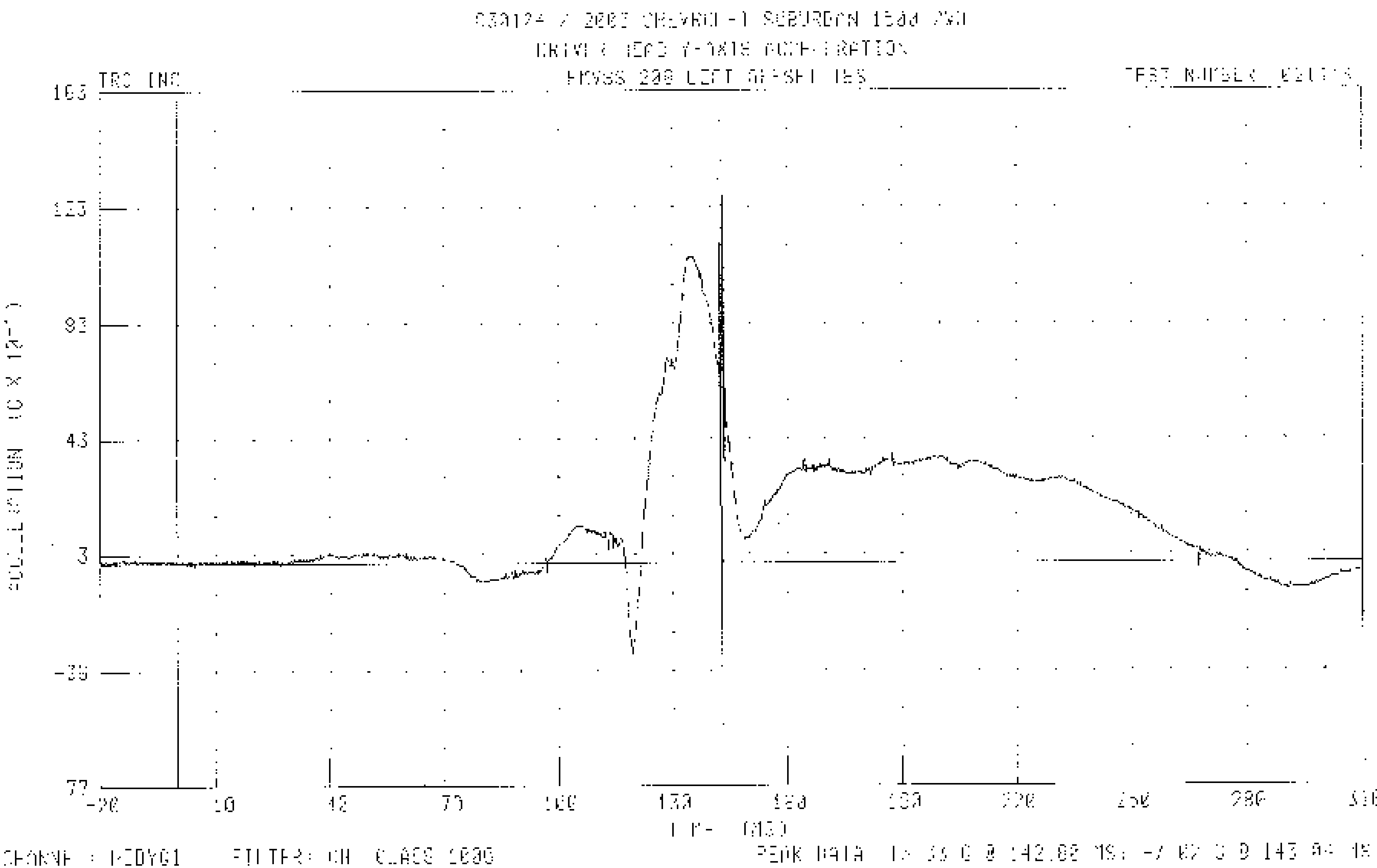


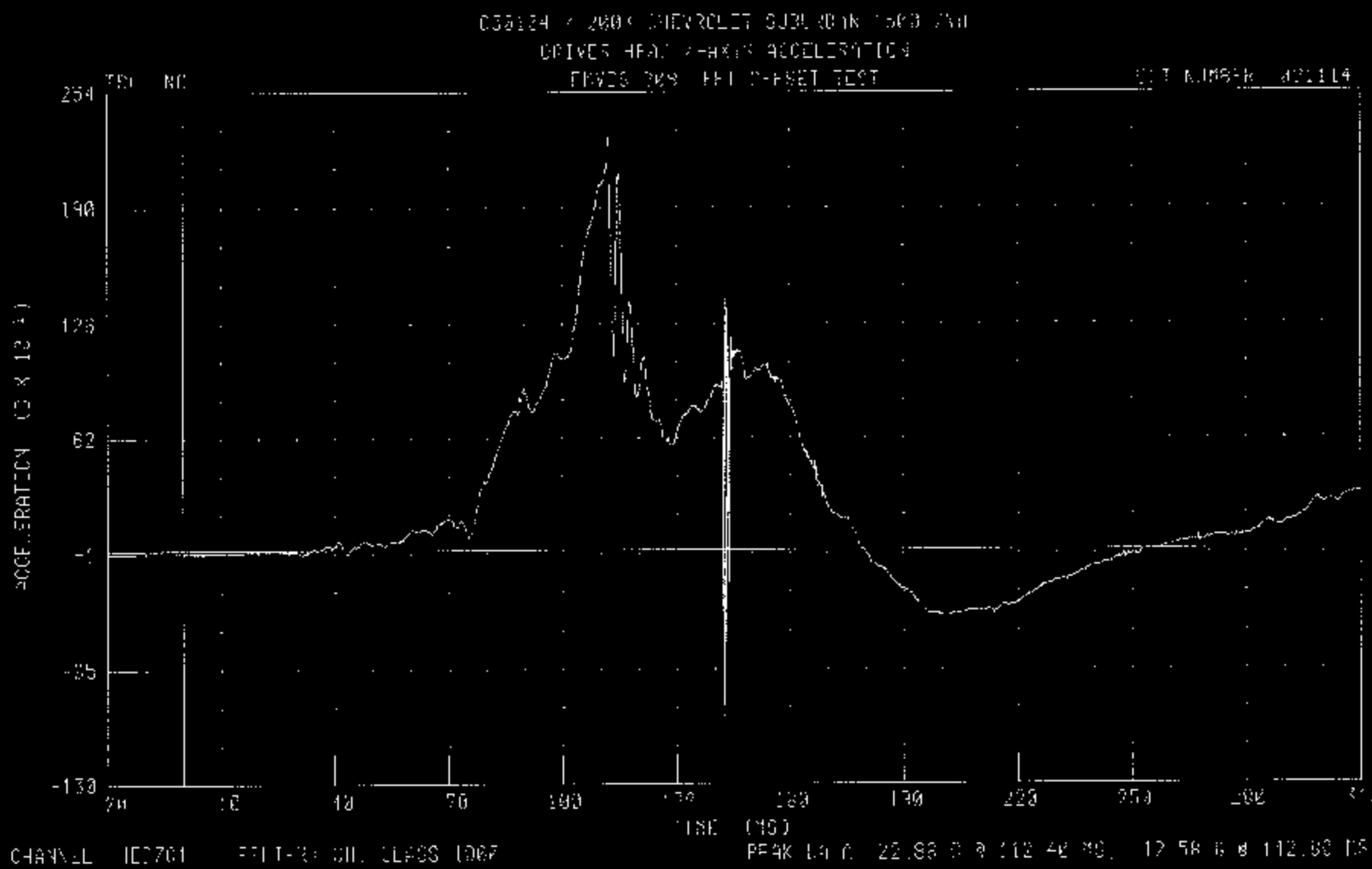
Provide Details of Stoddard Solvent Spillage Locations - None

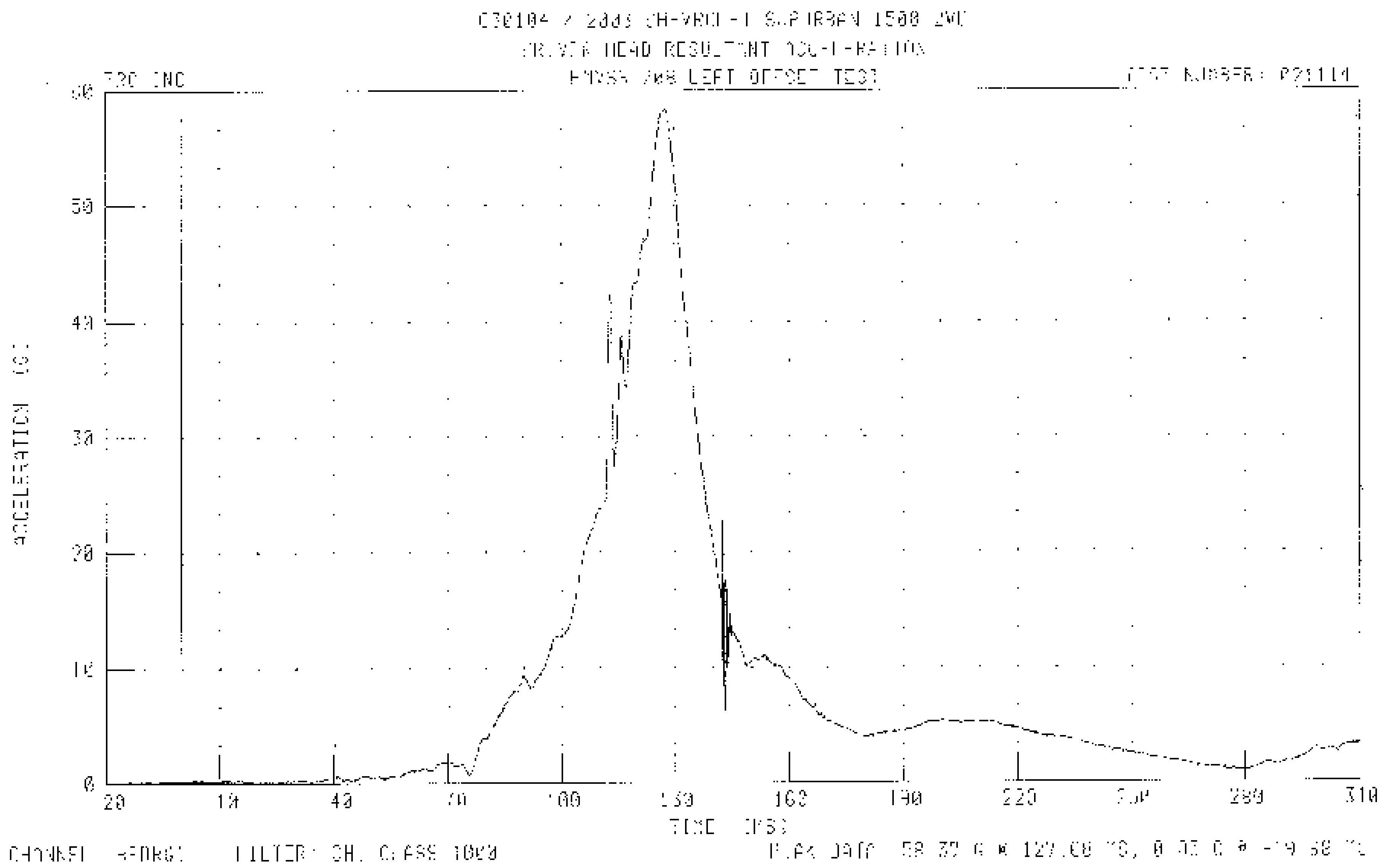
Section 6

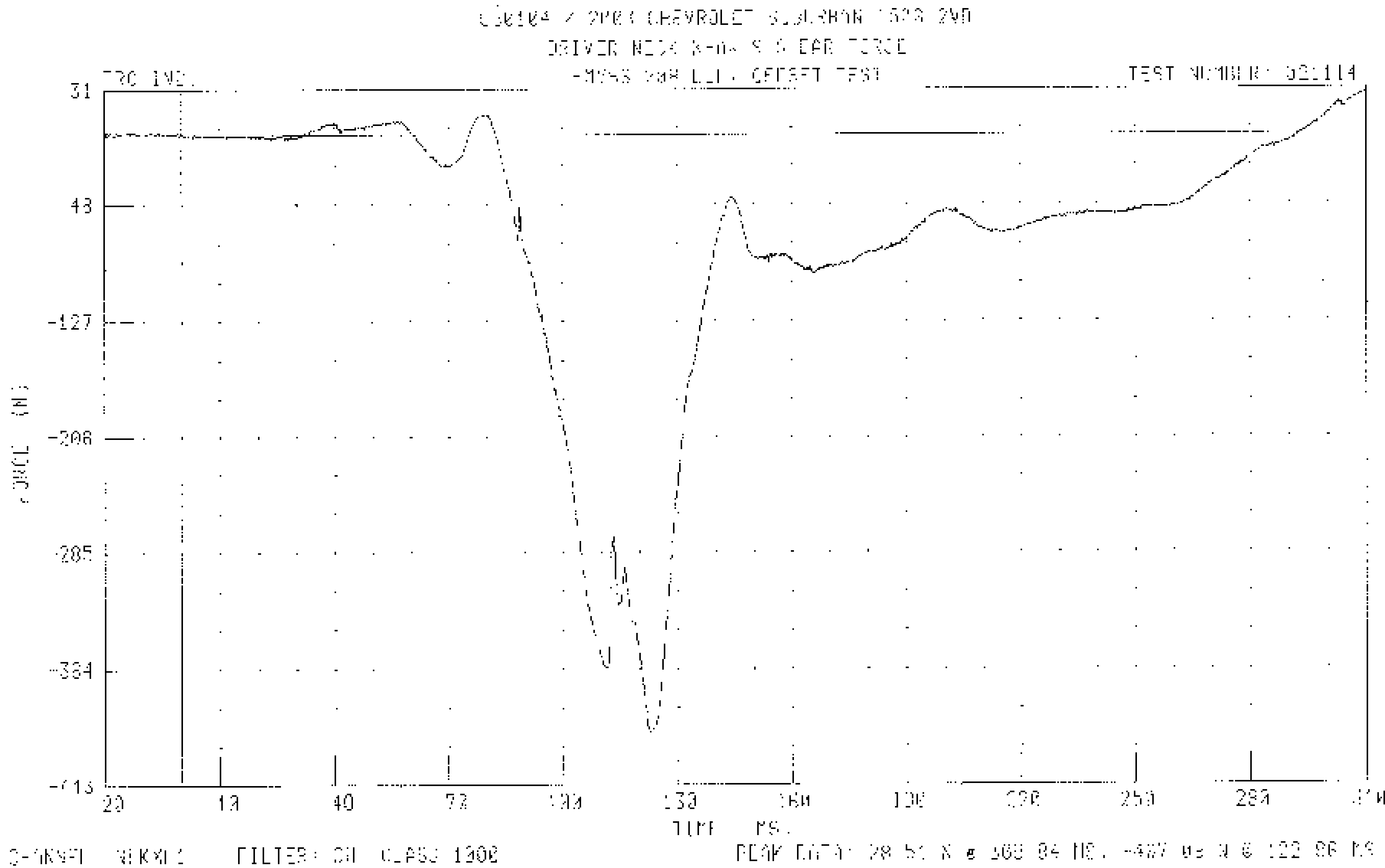
Test Data


2003 CHEVROLET SUBURBAN
ACCELERATION
SET TEST
TRC INC.
0
-8
-16
-24
-32
-40
-48
-56
20
100
ACCELERATION (G)
TIME (MS)
CHANNEL
FILTER
CLASS 1000

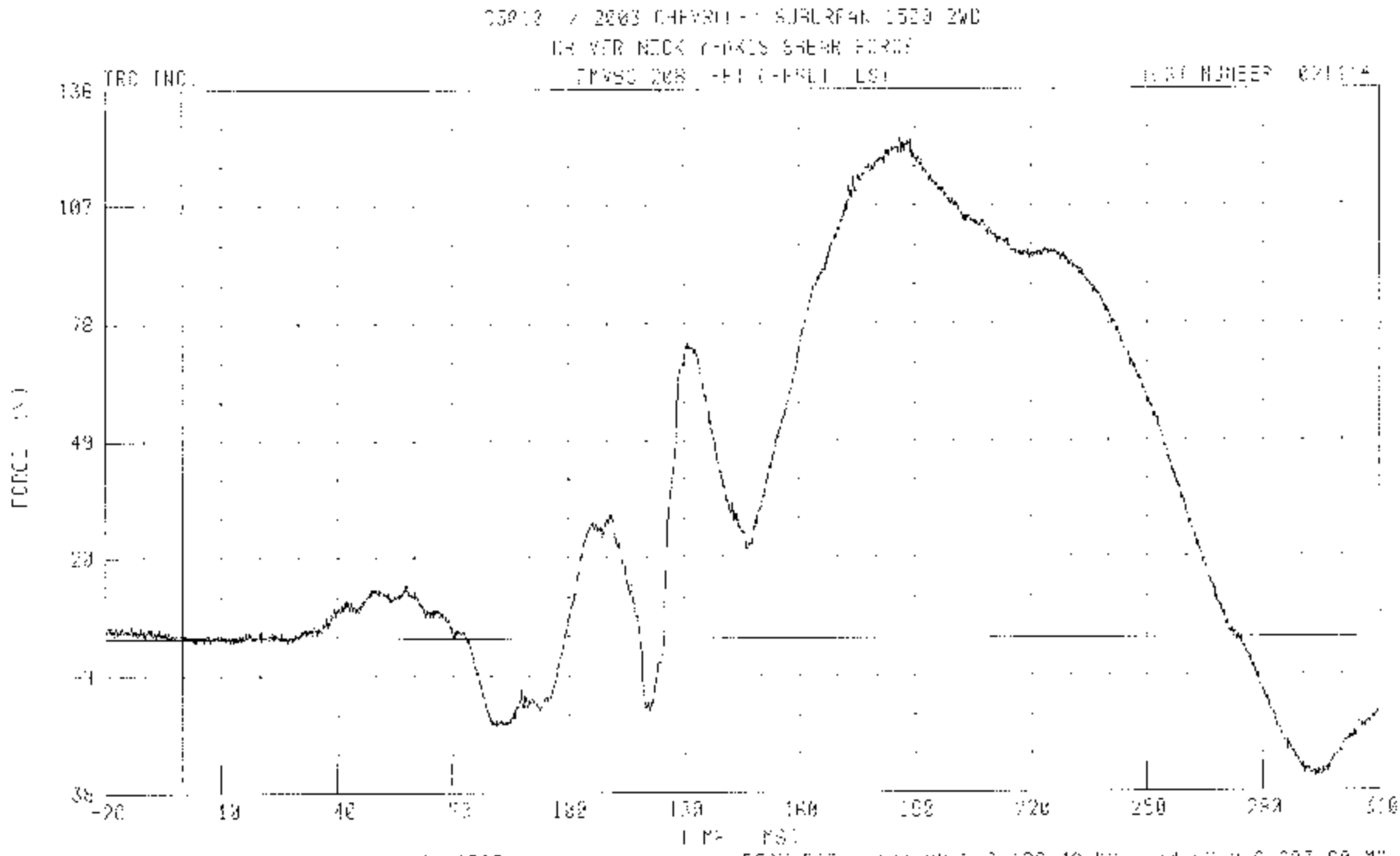

DRIVER HEAD Y-AXIS ACCELERATION
FMVSS 208 LEFT OFFSET 16S
TRC INC
TEST NUMBER
TIME (MS)
CHANNEL : HDYG1
FILTER: CH CLASS 1000
PEAK DATA

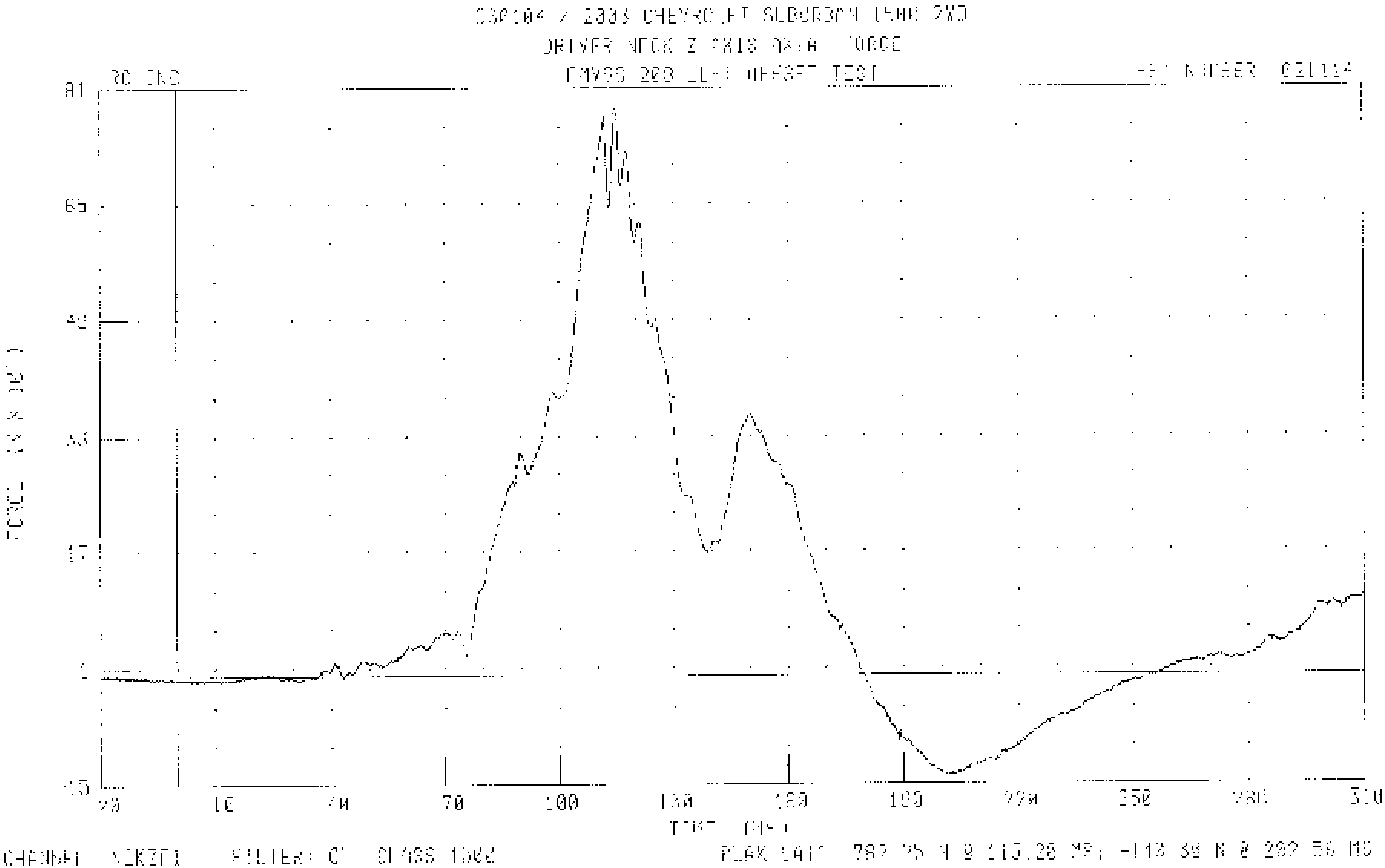

254
190
126
62
-1
-65
-130
ACCELERATION (G X 12.4)
TIME (MS)

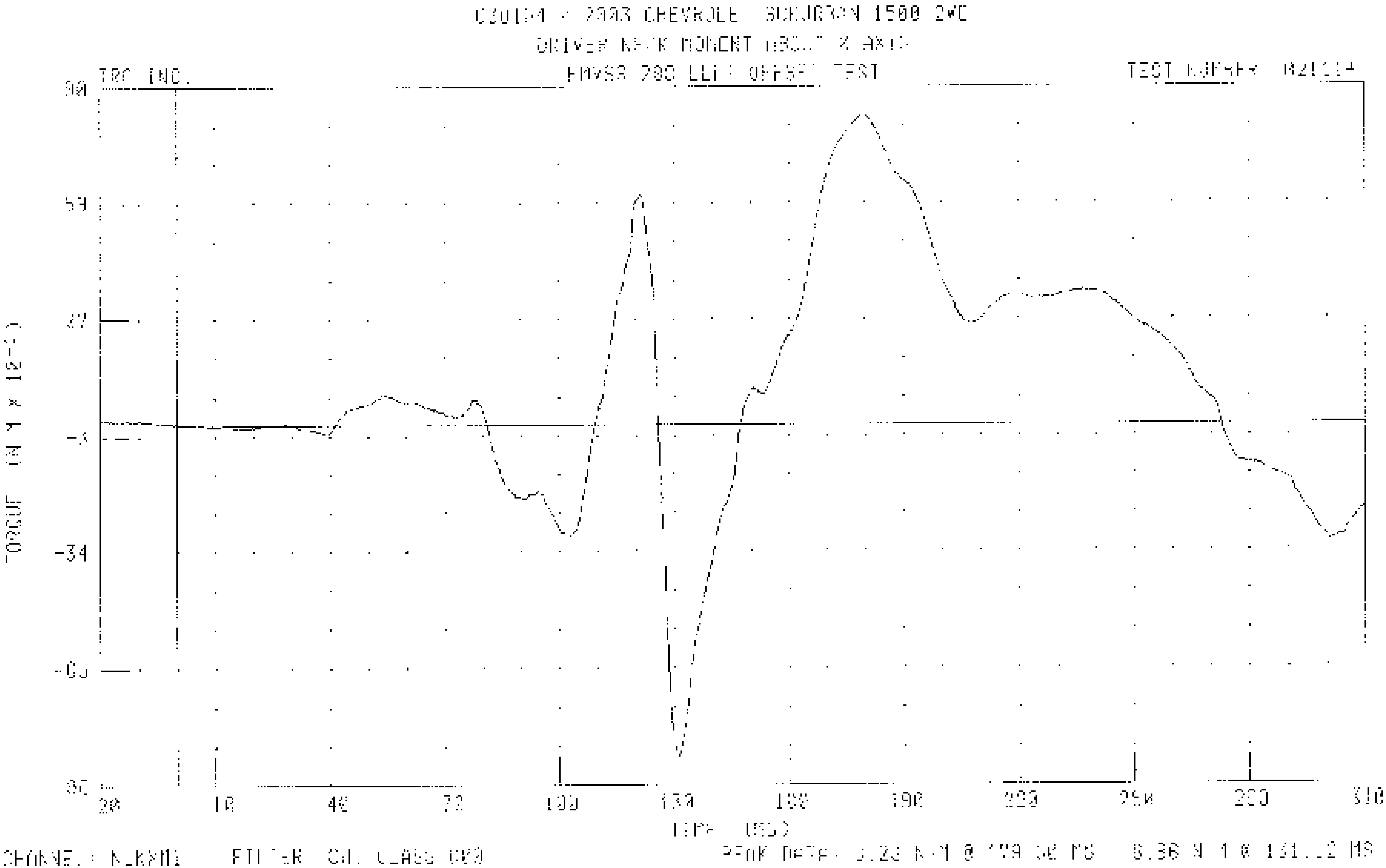

TRC INC
FMVSS 208 LEFT OFFSET TEST
ACCELERATION (G)
0
10
20
30
40
50
60
20
40
70
100
130
160
190
220
280
310
TIME (MS)
FILTER: CH. CLASS 1000
58.39 G @ 127.00 MS


CHEVROLET
DRIVER NECK
OFFSET TEST
TEST NUMBER
TRC INC.
31
43
-127
-206
-285
-364
20
40
TIME MS.
FILTER
CLASS 1000
PEAK DATA

9-9


TRC INC.
136
107
78
49
20
-9
-38
FORCE (LB)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)

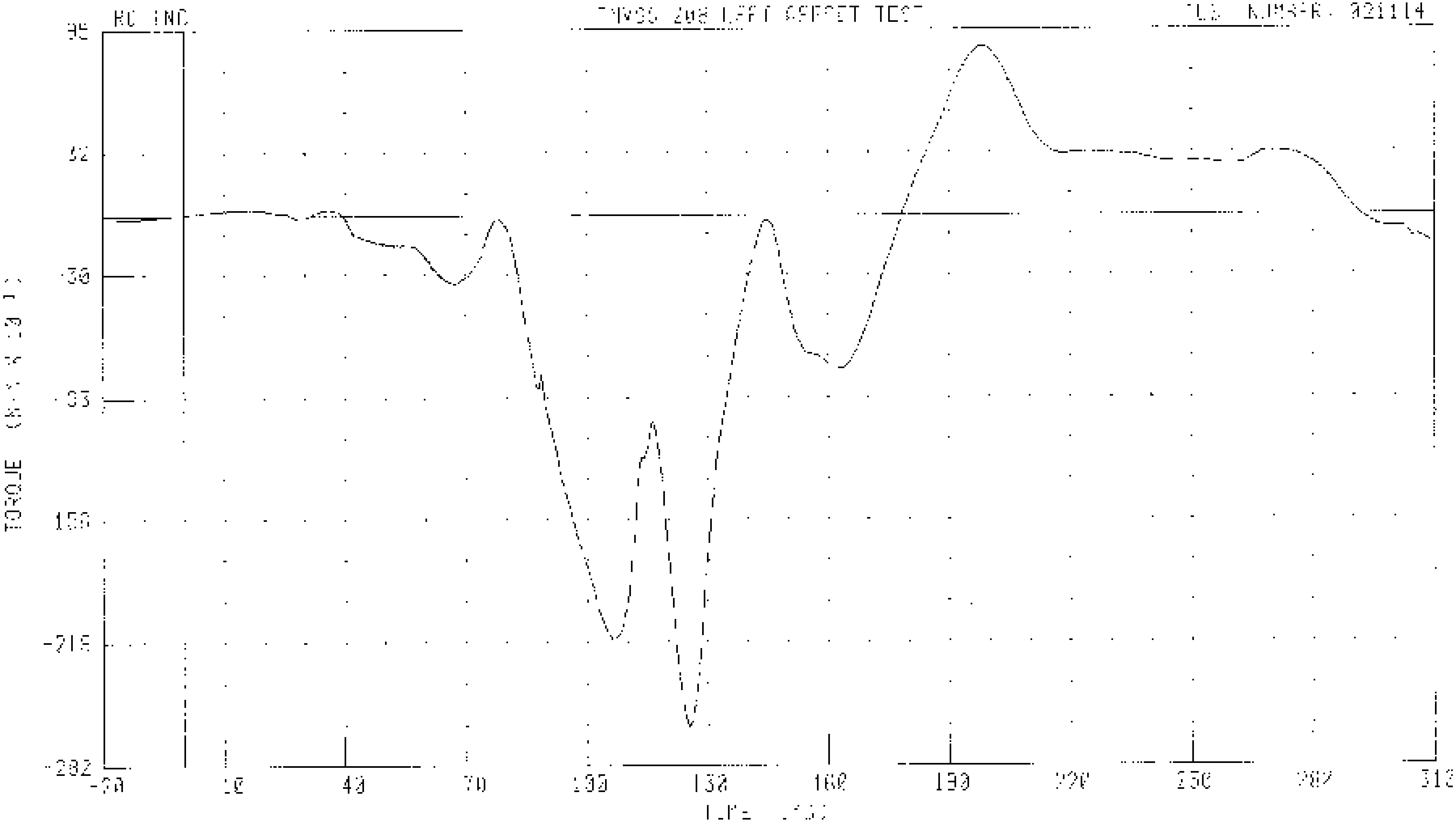

030104 / 2003 CHEVROLET SUBURBAN 1500 2WD
DRIVER NECK Z AXIS AXIAL FORCE
FMVSS 208 LEFT OFFSET TEST
TEST NUMBER 021114
FORCE (N X 10^1)
81
65
49
33
17
1
-15
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL
FILTER: CFC CLASS 1000
PEAK DATA: 782.95 N @ 113.28 MS; -113.39 N @ 202.56 MS


2003 CHEVROLET SUBURBAN 1500 2WD
DRIVER NECK MOMENT ABOUT X AXIS
TRC INC.
FMVSS 208 LEFT OFFSET TEST
TORQUE (N M X 10-1)
90
59
27
-3
-34
-65
-96
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)

DRIVER NECK MOMENT ABOUT Y AXIS

FMVSS 208 LEFT OFFSET TEST

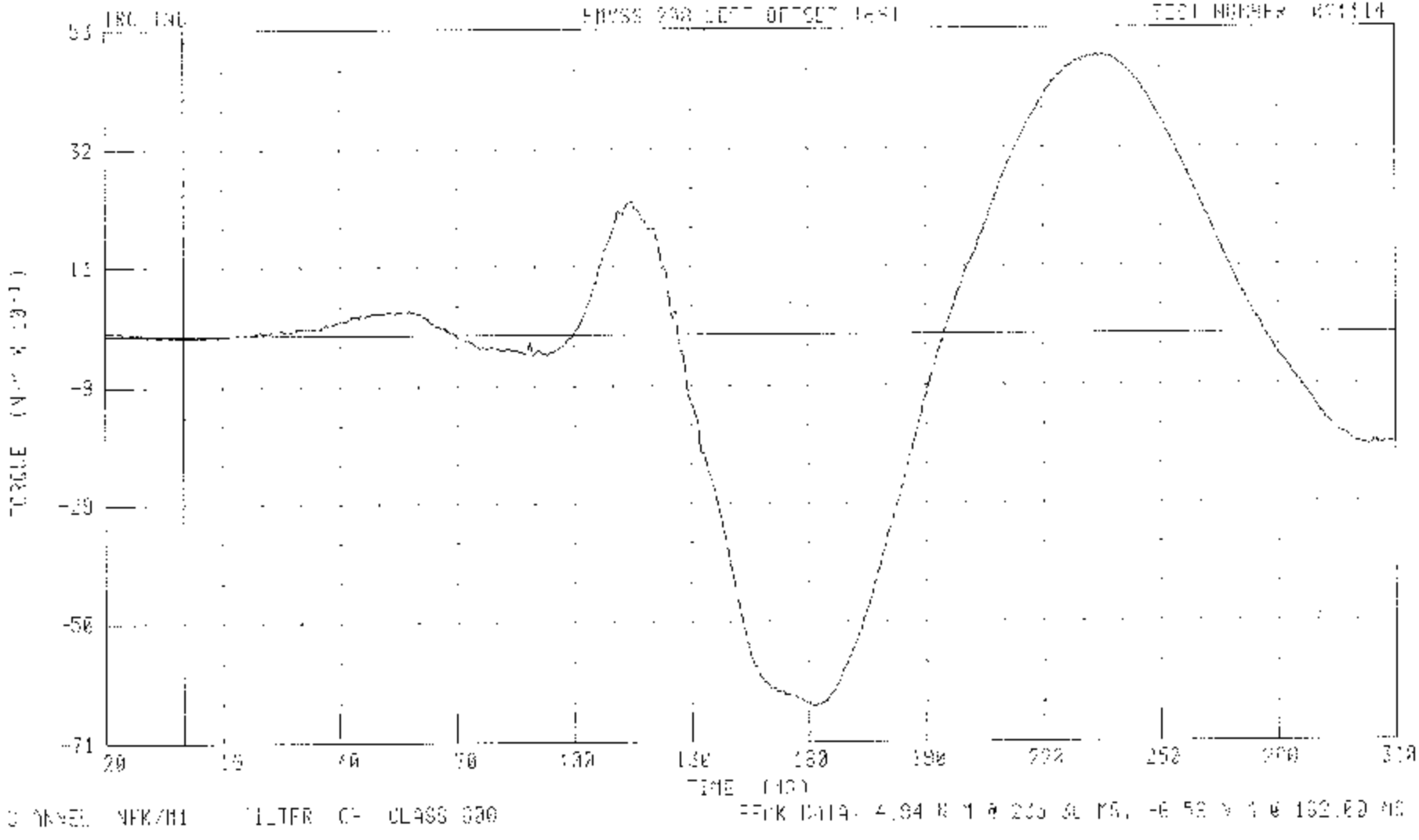
TEST NUMBER: 021114

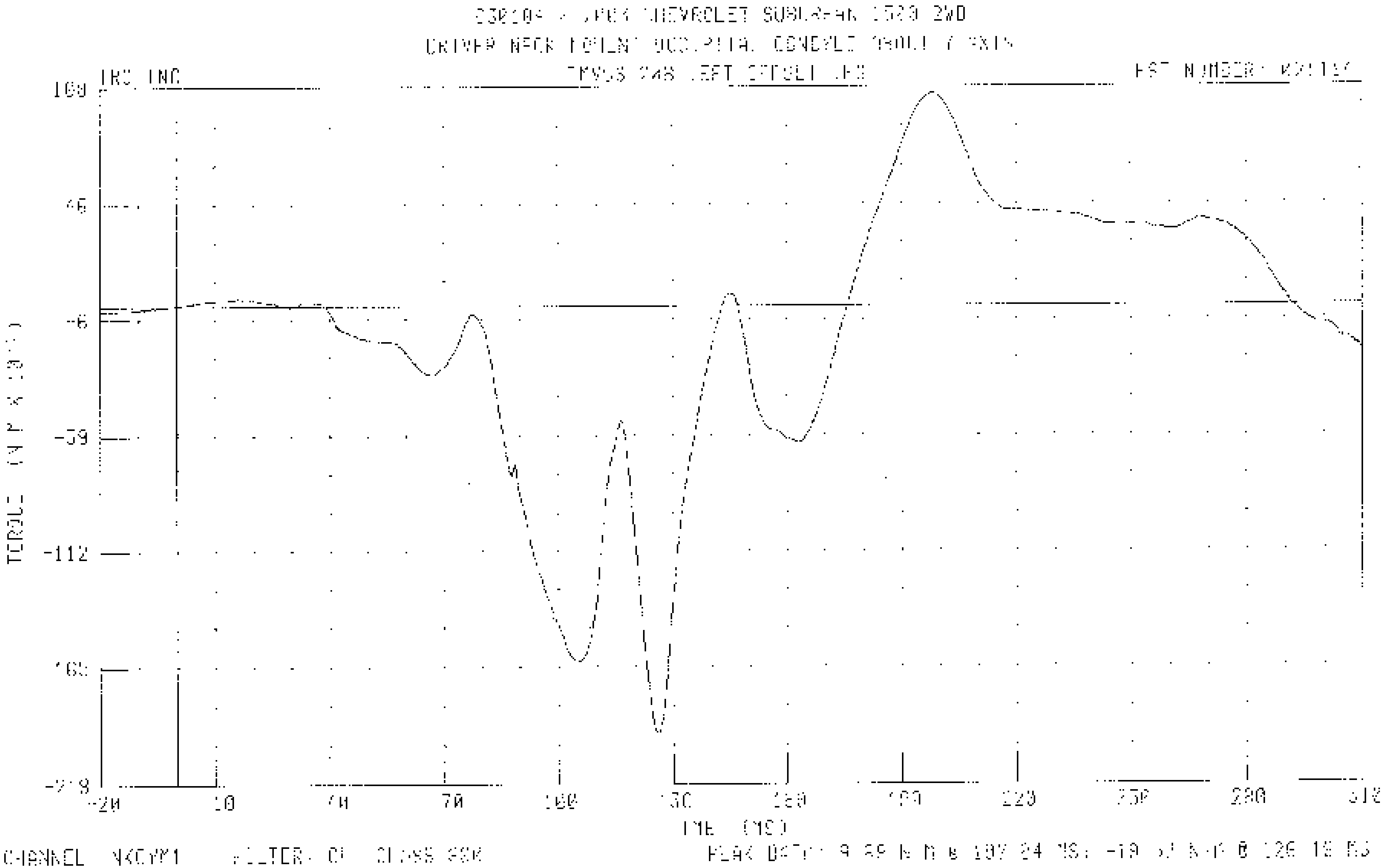


CHANNEL NEKYM1 FILTER: CF CLASS 600

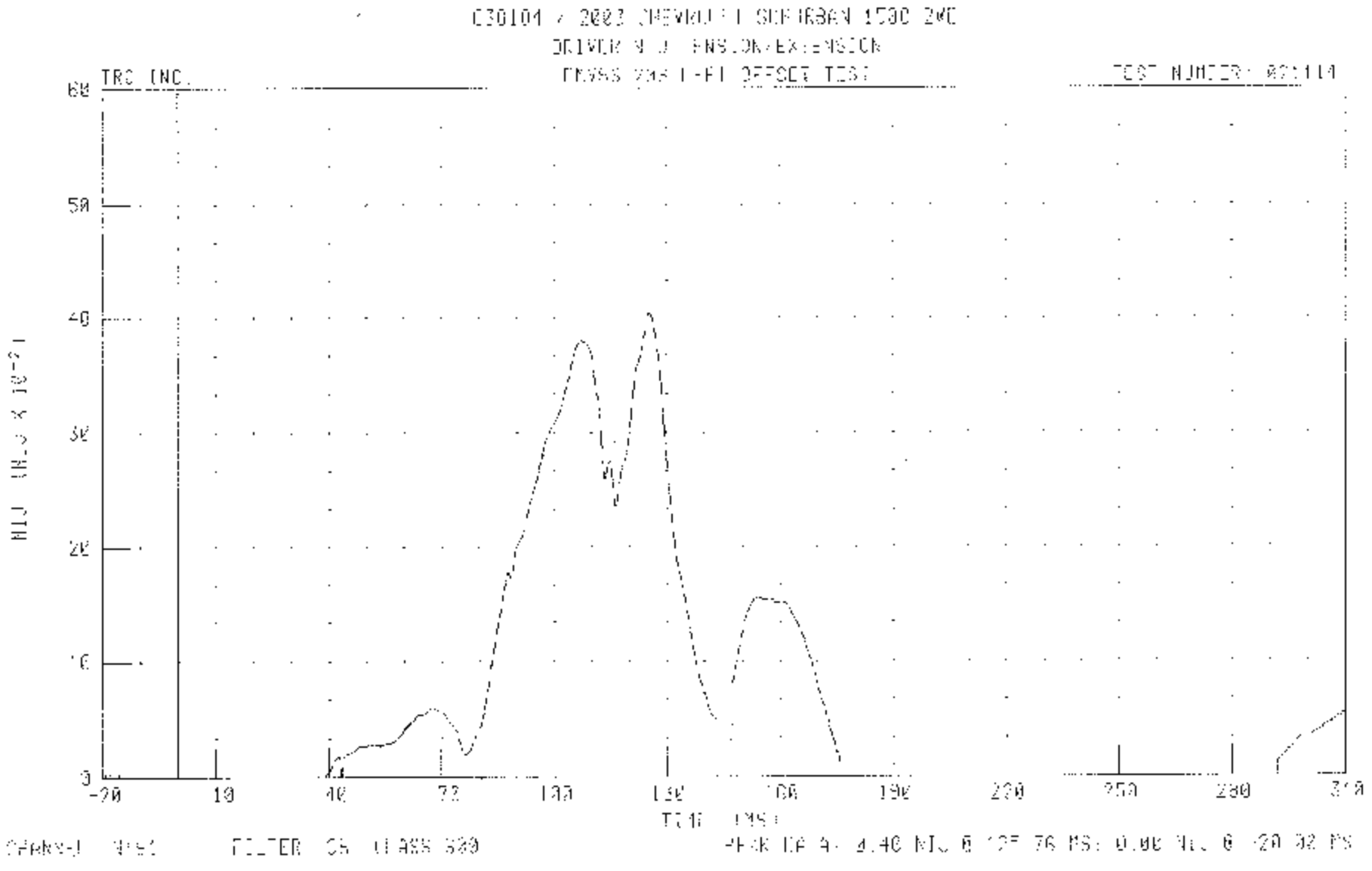
PEAK DATA:

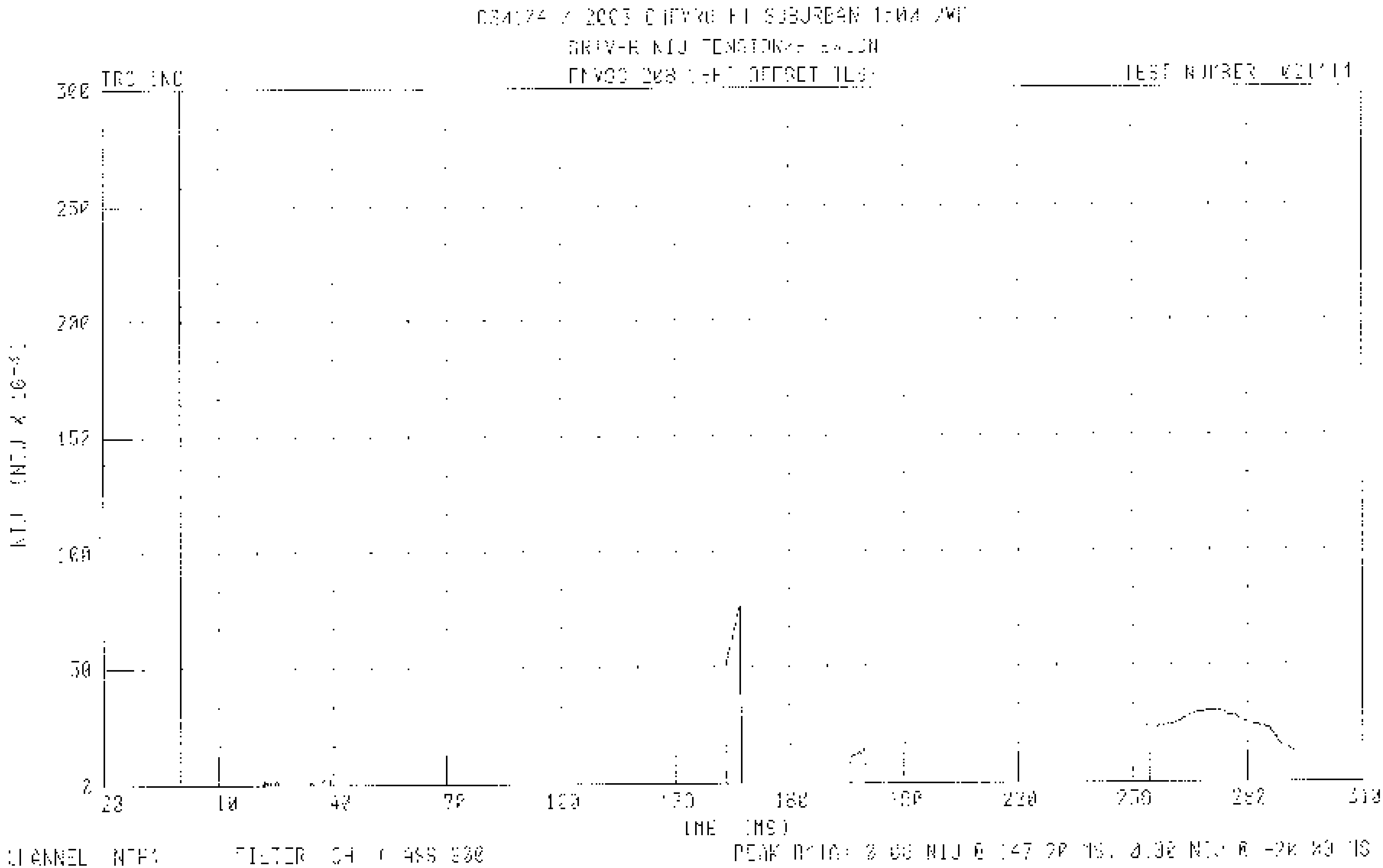
021114


TEST NUMBER
53
32
11
-9
-29
-50
-71
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
TIME (MS)


CHEVROLET SUBURBAN 2WD
DRIVER NECK
LEFT
TRC INC
TEST NUMBER
100
46
-6
-59
-112
-165
-218
TORQUE (N M X 10)
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL NKCYM1
FILTER CLASS 600
PEAK DATA

921114

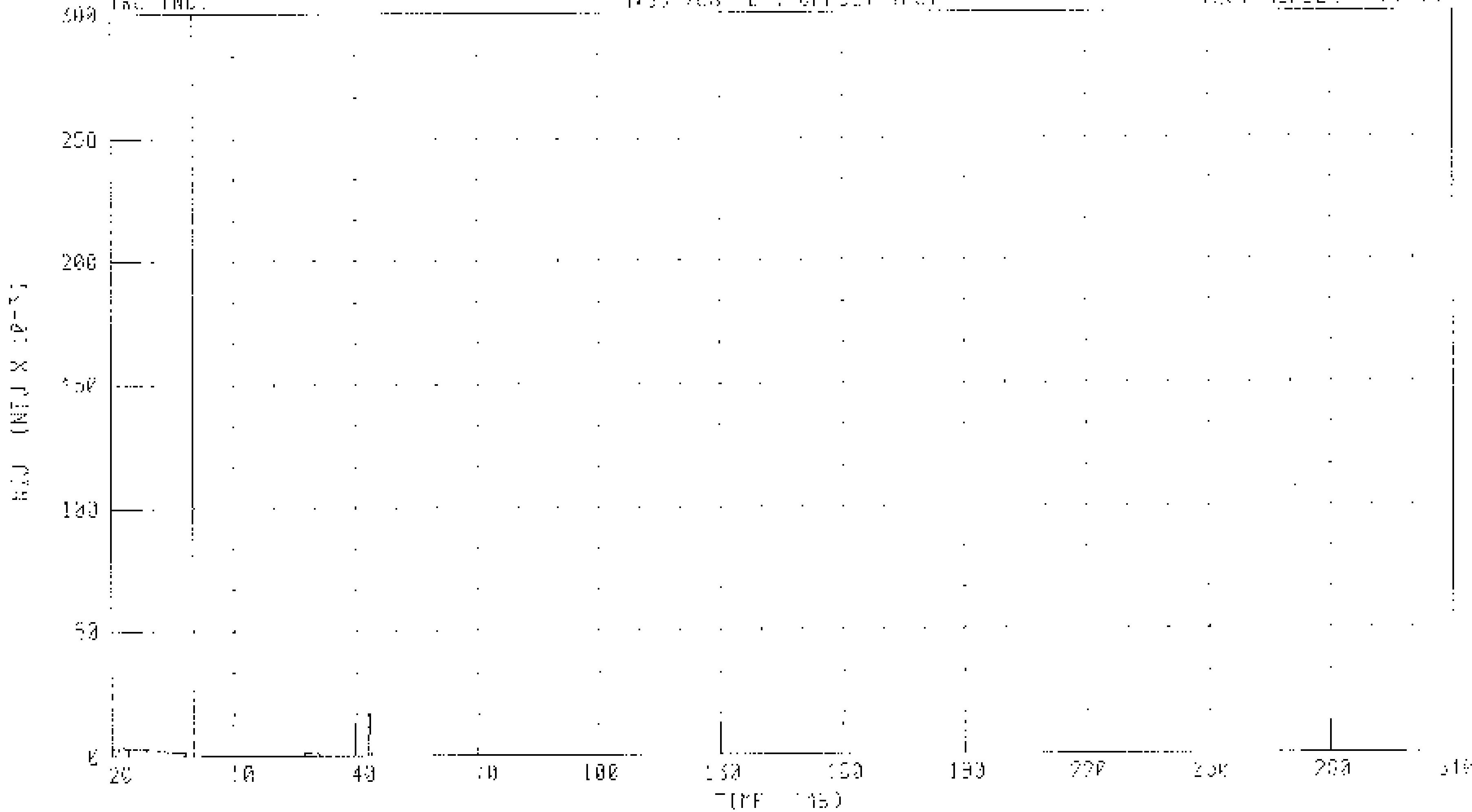

C30101 / 2003 CHEVROLET SUBURBAN 1500 2WD
DRIVER'S DOOR/EXTENSION
TRC INC.
TEST NUMBER: 021114
60
50
40
30
20
10
0
-90
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)


TRC INC
TEST NUMBER
300
250
200
150
100
50
0
20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL
FILTER
PEAK DATA

C30104 / 2003 CHEVROLET SUBURBAN 1500 2WD

DRIVER NIJ COMPRESSION/EXTENSION

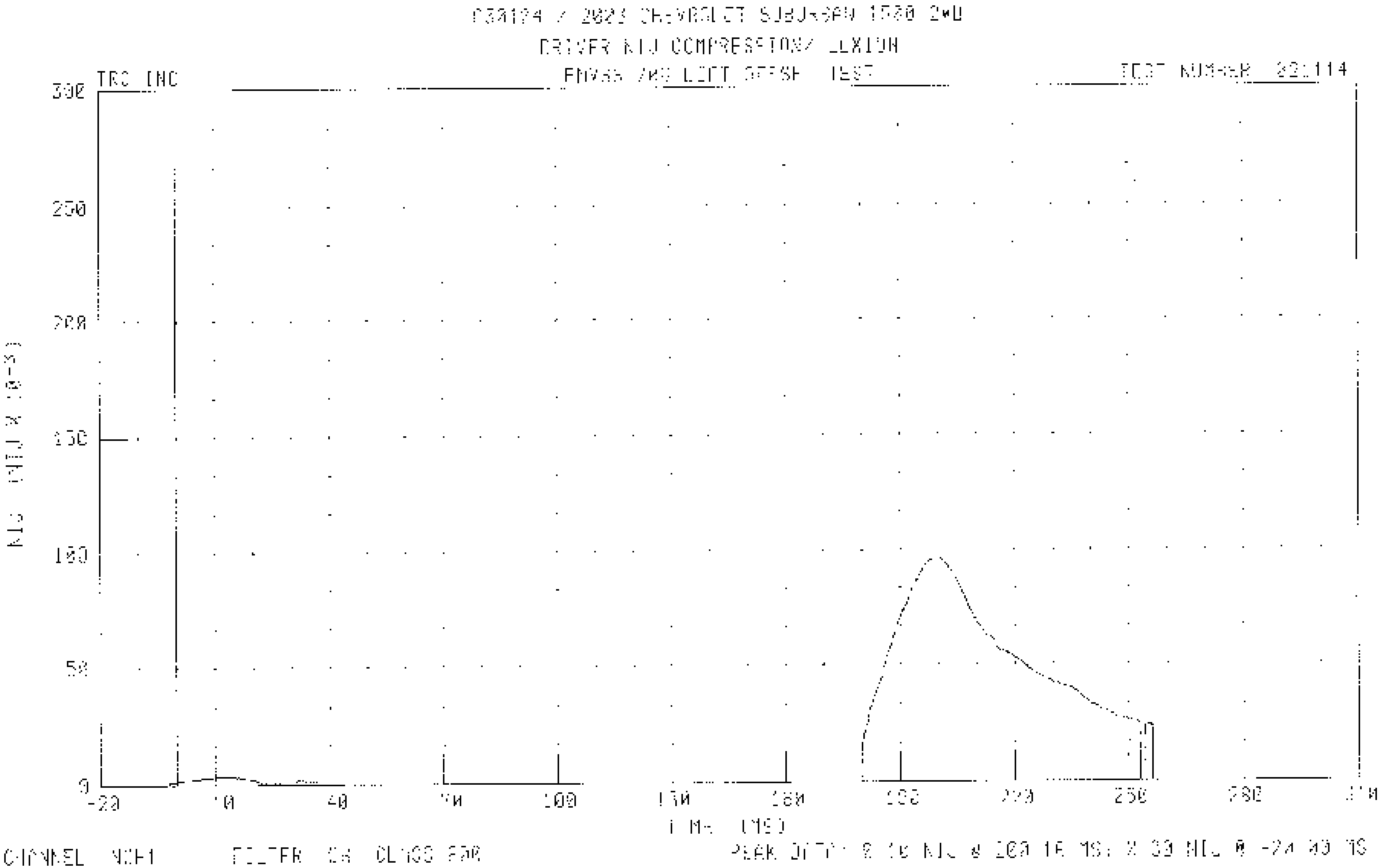
TRC INC. FMVSS 208 LEFT OFFSET TEST TEST NUMBER 021114

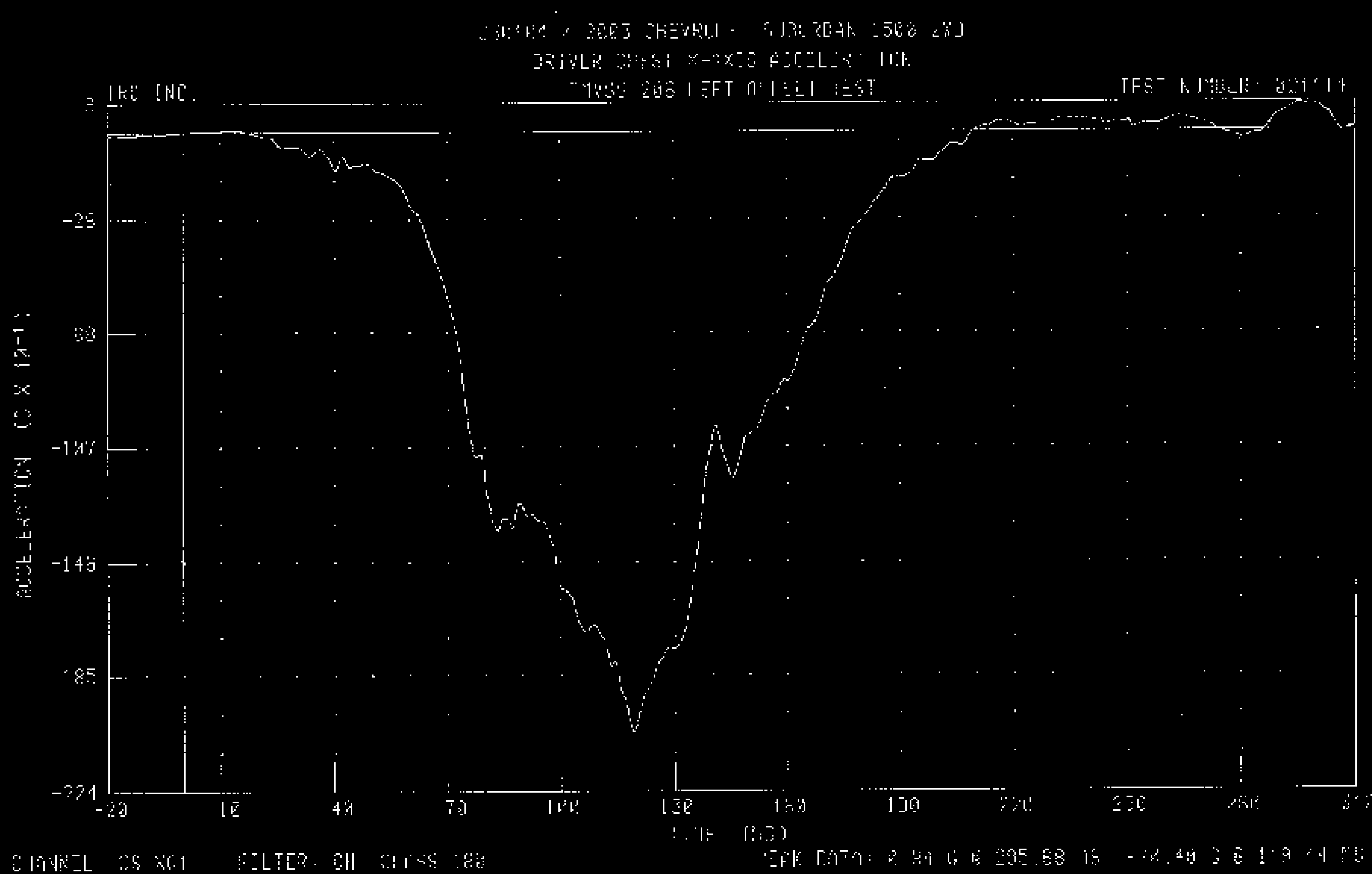


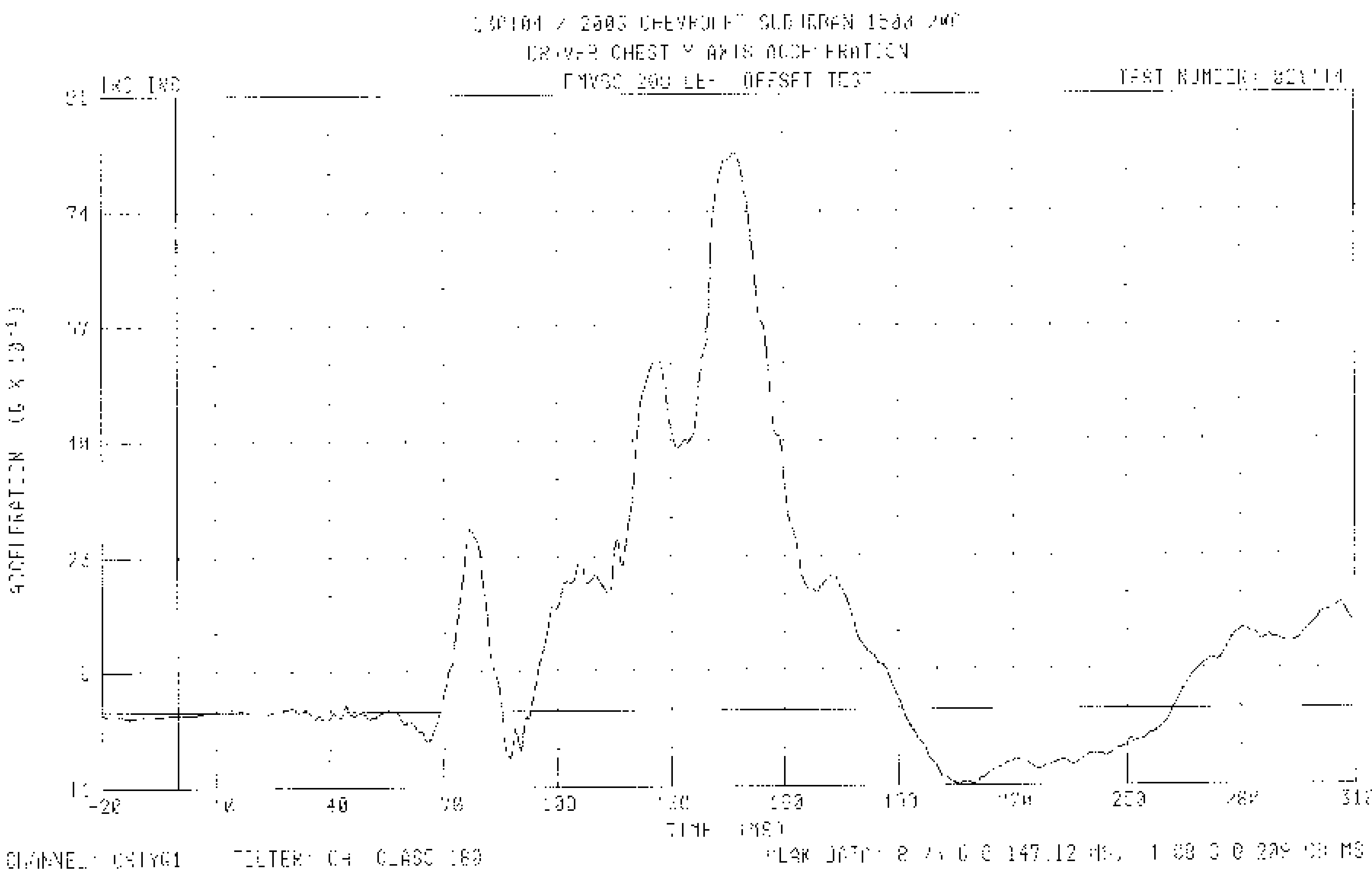
CHANNEL: NCE1 FILTER: CFC CLASS 600

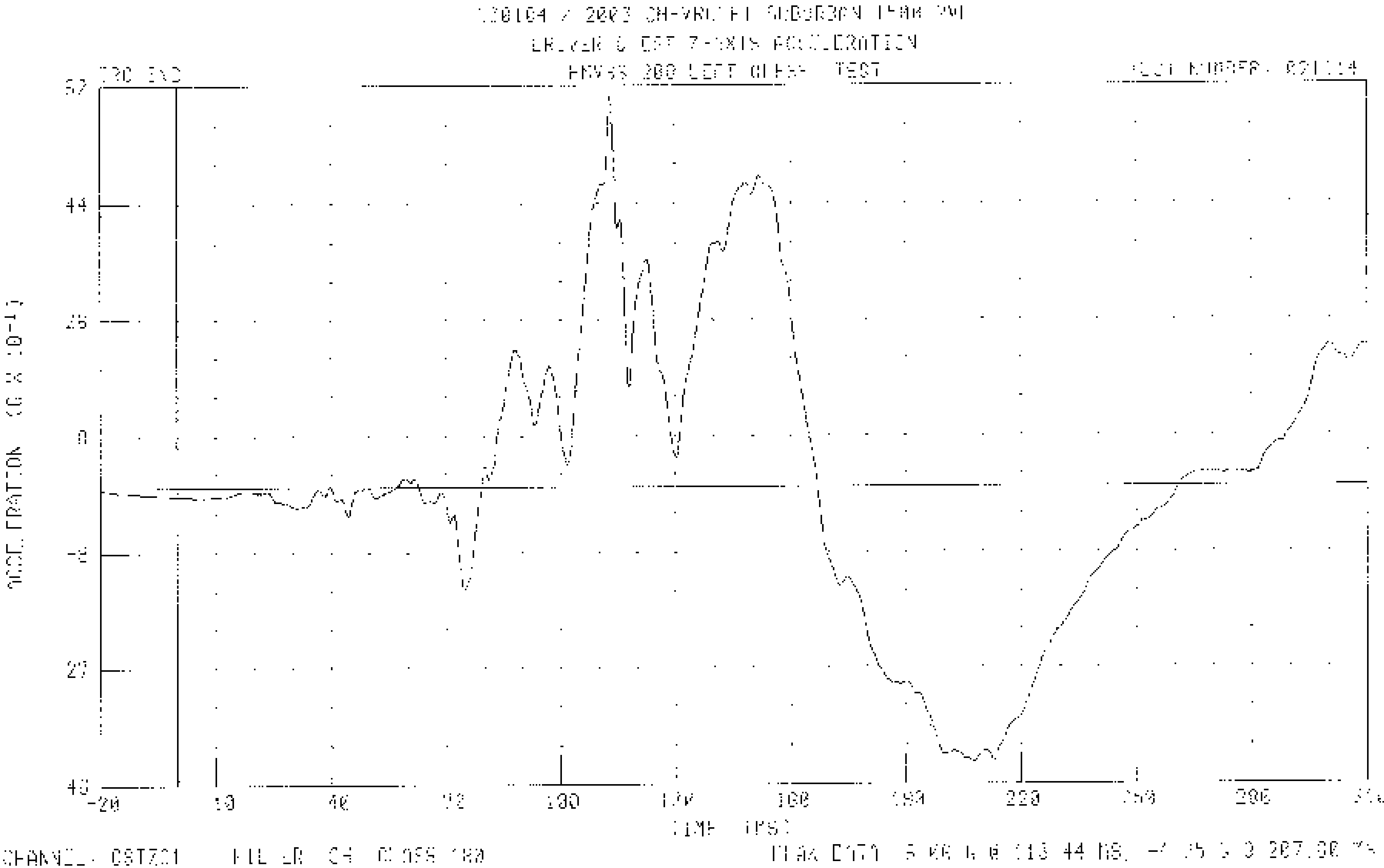
PEAK DATA: 0.02 NIJ @ 40.50 MS, 0.00 NIJ @ 10.28 MS

021114


C33194 / 2023 CHEVROLET SUBURBAN 1500 2WD
DRIVER NIJ COMPRESSION/ FLEXION
FMVSS 208 LEFT OFFSET TEST
TEST NUMBER 021114
TRC INC
NIJ (NIJ X 10-3)
300
250
200
150
100
50
0
-20
0
40
100
180
200
220
250
280
TIME (MS)
FILTER CFC CLASS 600

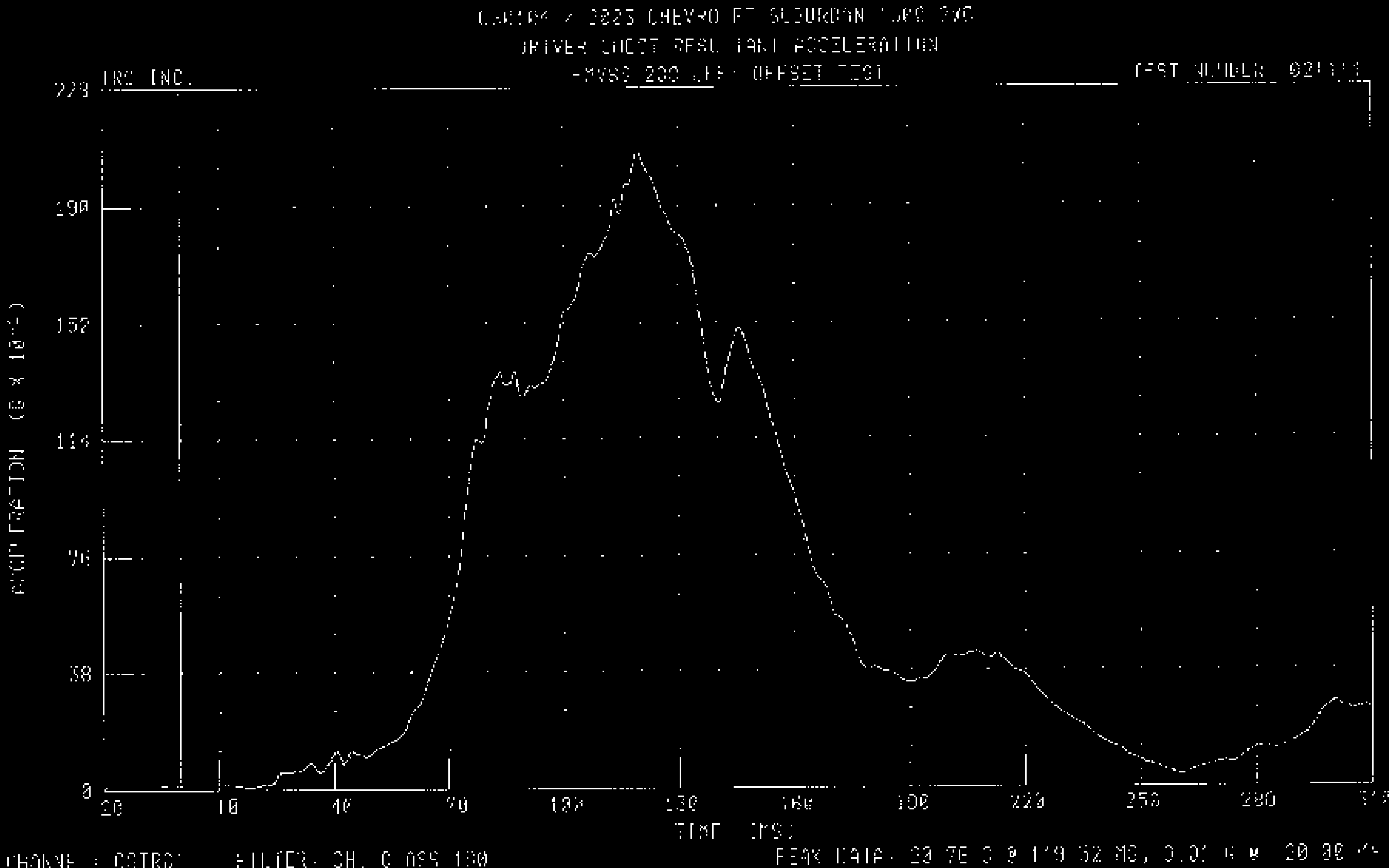

2003 CHEVROLET SUBURBAN 1500 2WD
DRIVER CHEST X-AXIS ACCELERATION
TRC INC.
TEST NUMBER
ACCELERATION
TIME (MS)
CHANNEL CS X01
FILTER: ON CLASS 180
-20
10
40
70
100
130
160
190
220
250
280
310
0
-25
-224

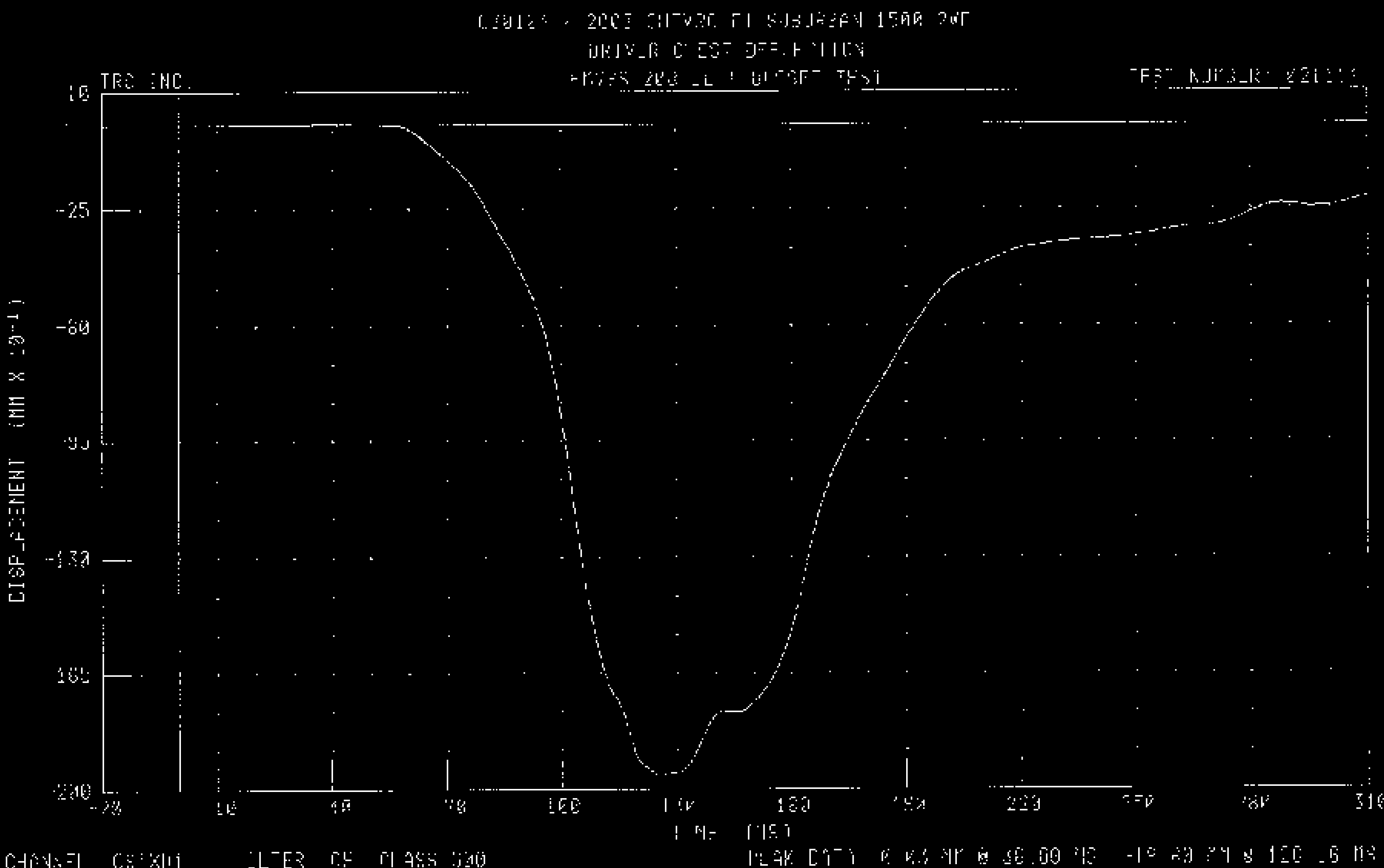

2003 CHEVROLET SUBURBAN 1500 2WD
DRIVER CHEST Y AXIS ACCELERATION
FMVSS 208 LEFT OFFSET TEST
TEST NUMBER: 921114
ACCELERATION (G X 10^-1)
TIME (MS)
CHANNEL: CHTYG1
FILTER: CH CLASS 180
-20
40
100
160
220
250
310


030104 / 2003 CHEVROLET SUBURBAN 1500 2WD
DRIVER CG Z-AXIS ACCELERATION
FMVSS 208 LEFT OBLQ TEST
TRC END
PLOT NUMBER: 021114
ACCELERATION (G X 10-1)
TIME (MS)
CHANNEL: CGTZ01
FILTER: CH CLASS 180
MAX DATA: 5.66 G @ 113.44 MS, -4.35 G @ 207.90 MS

SI-9

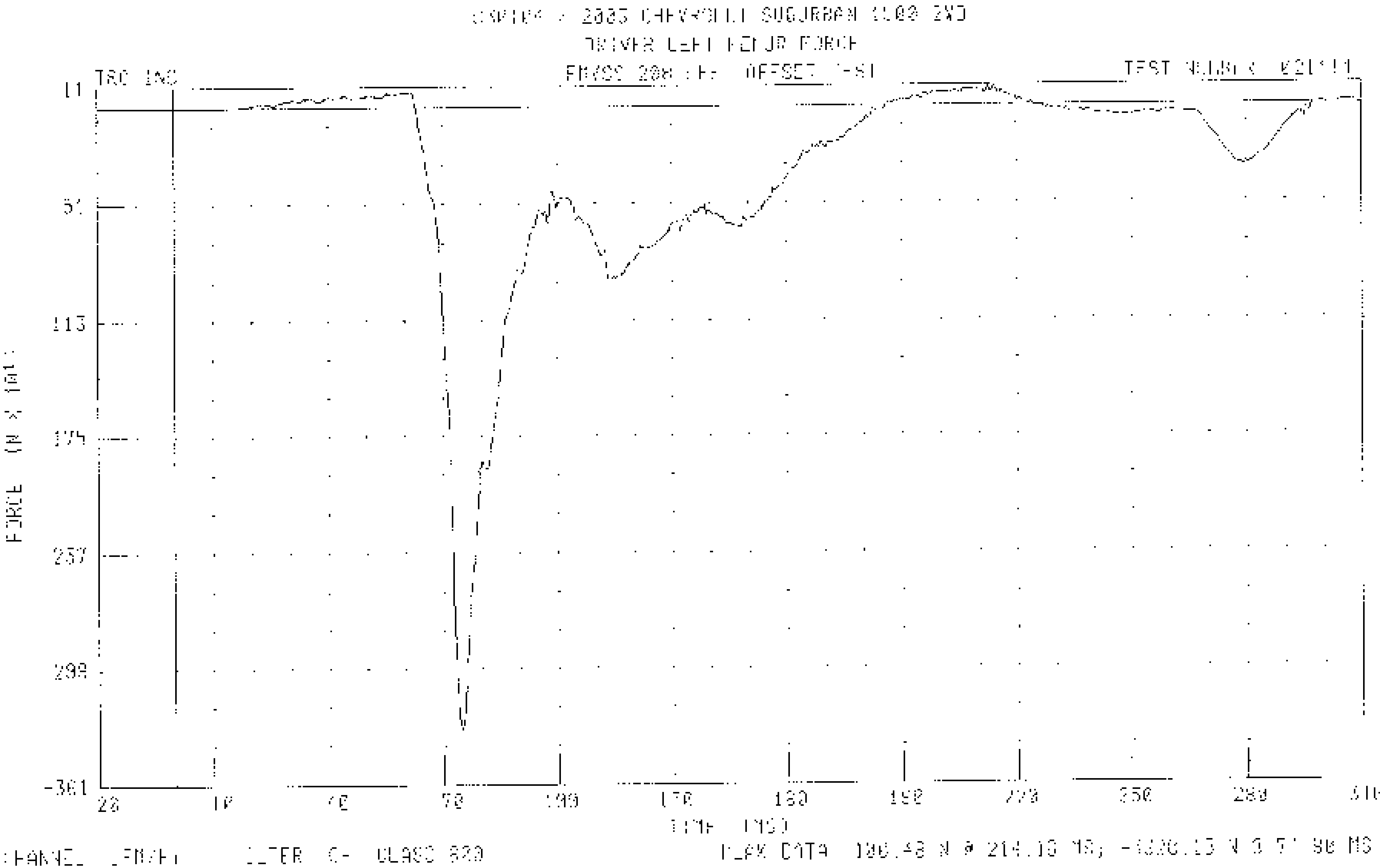
021114


DRIVER CHEST RESULTANT ACCELERATION
TRC INC.
TEST NUMBER
TIME (MS)
CHANNEL: CSTRC1
FILTER: CH. C
PEAK DATA
0
38
76
114
152
190
228
-20
10
40
70
100
130
160
190
220
250
280
310



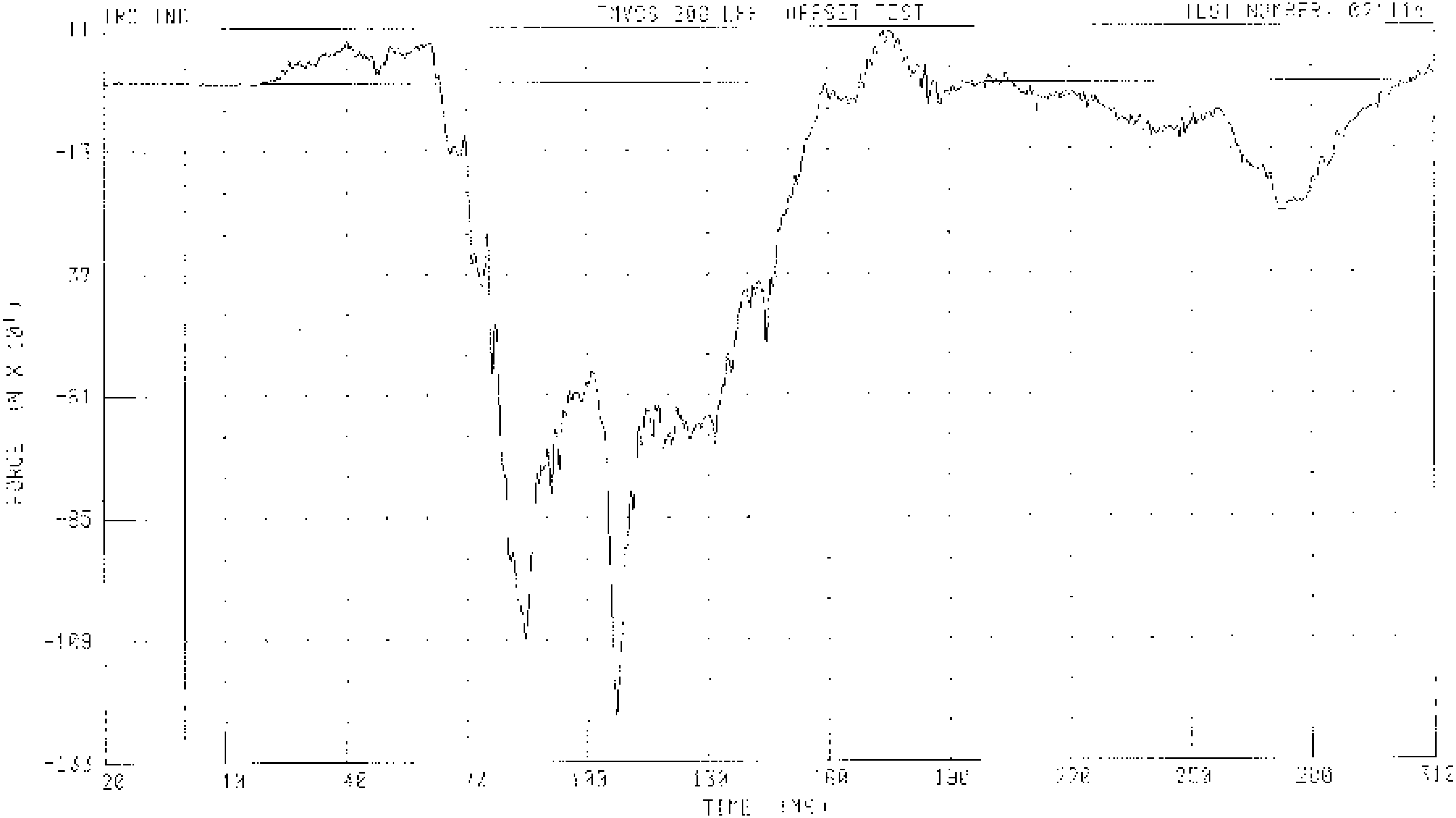
C 21

021114

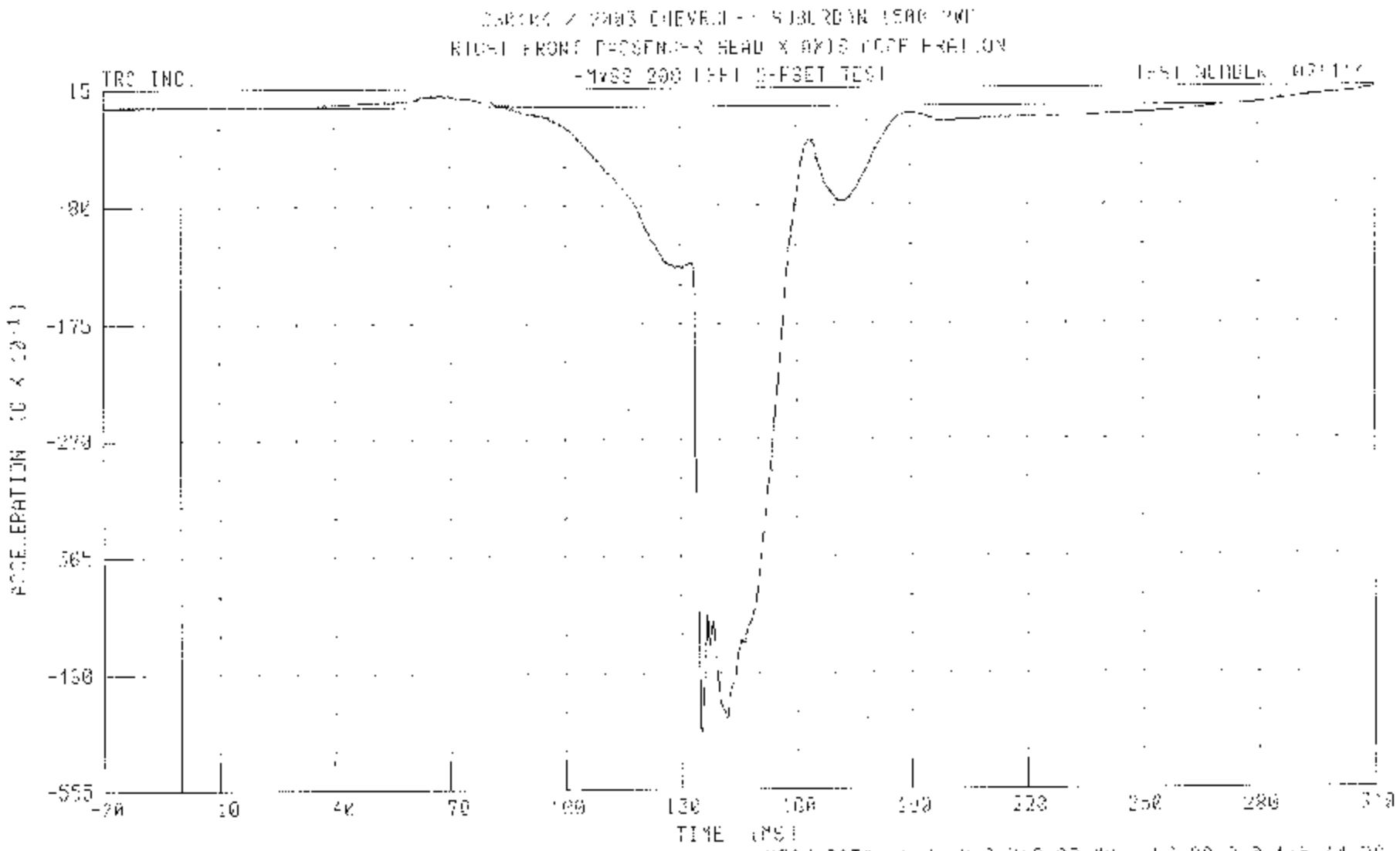

CAPITOL / 2003 CHEVROLET SUBURBAN C1500 2WD
DRIVER LEFT FEMUR FORCE
FMVSS 208 (F) OFFSET TEST
TRC INC
TEST NUMBER 021114
FORCE (N X 10)
11
51
113
175
237
299
-361
28
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL LFM/F1
FILTER CF CLASS 600
PEAK DATA 100.48 N @ 214.10 MS; -1330.13 N @ 71.90 MS

021114

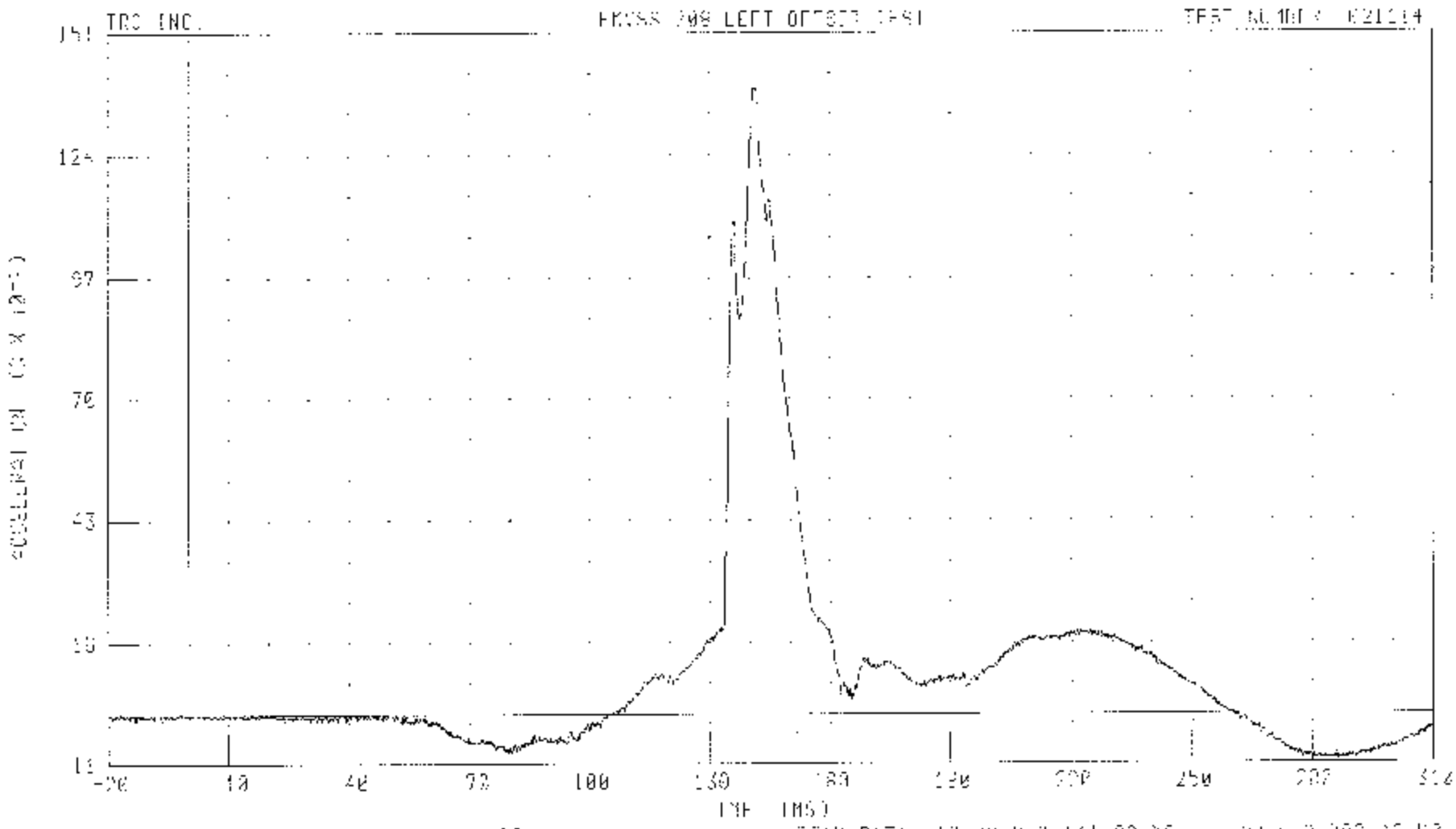
C30104 / 2003 CHEVROLET SILVERADO 1500 2X?
DRIVER RIGHT ? FORCE
TMVOS 200 LFF OFFSET TEST



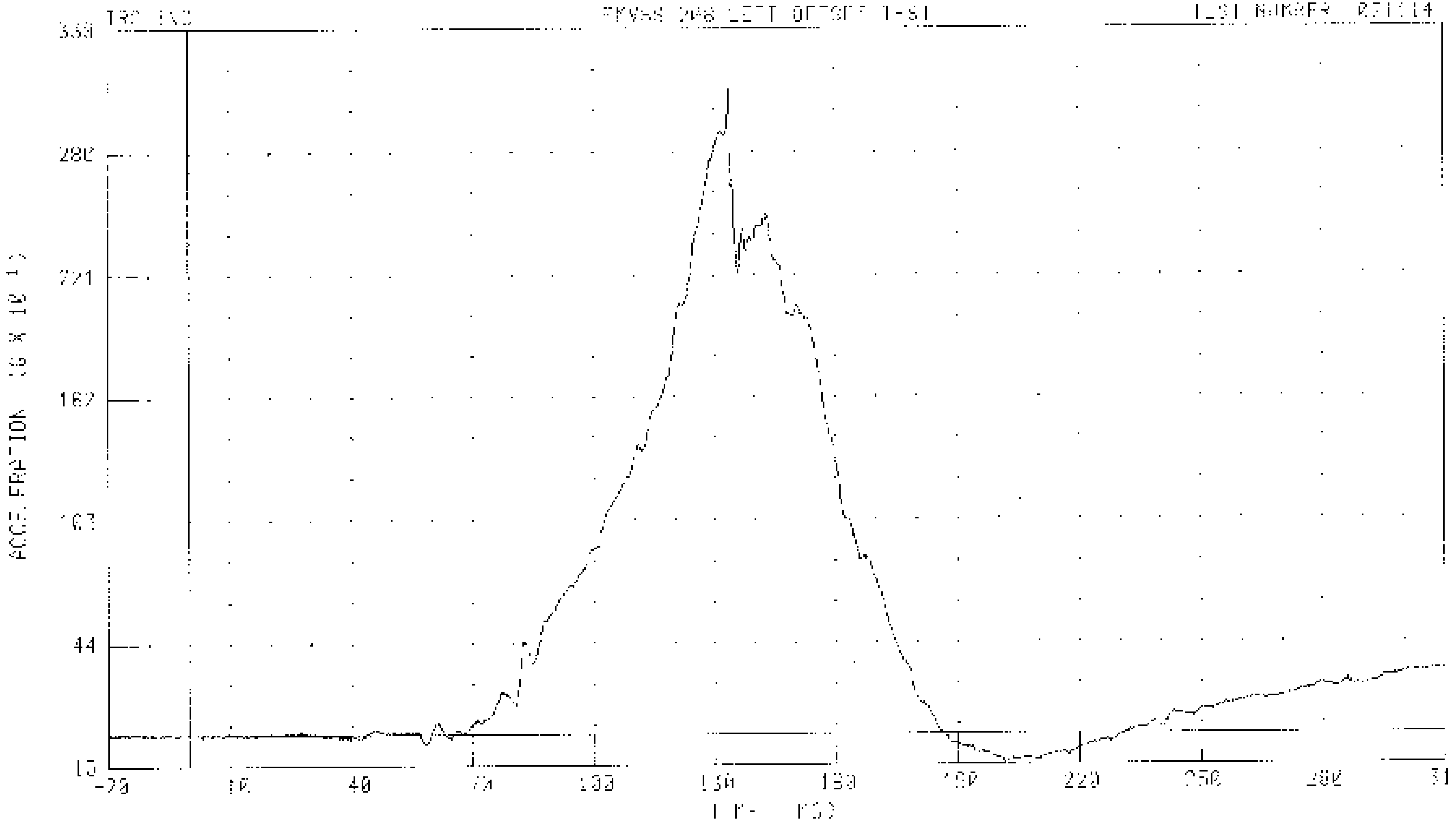
CHANNEL: RFMAX? FILTER: CF CLASS 60 PEAK DATA: 107.87 N @ 173.84 MS, -1270.32 N @ 107.30 MS


TRC INC.
0
-90
-180
-270
-360
-450
-90
-10
40
70
100
130
160
190
220
250
280
310
TIME (MS)

V-9


TRC INC.
151
124
97
70
43
16
-20
10
40
72
100
130
160
190
220
250
280
310
TIME (MS)

C30104 / 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER HEAD Z-AXIS ACCELERATION
FMVSS 208 LEFT OFFSET TEST
TEST NUMBER 021114

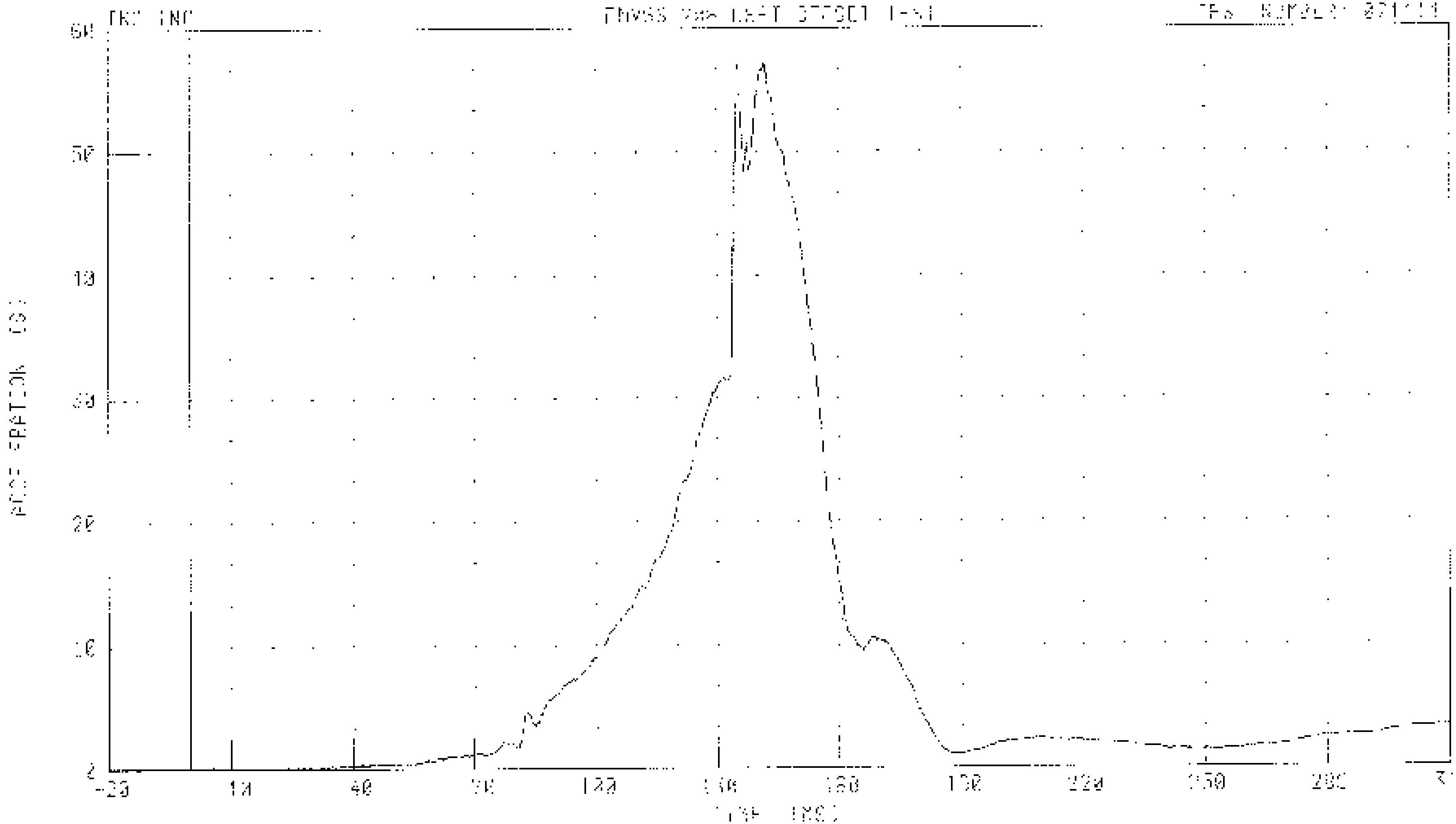


CHANNEL: HFD2G2   FILTER: CFC CLASS 1000
PEAK DATA: 31.02 G @ 134.00 MS, -1.45 G @ 201.52 MS

32 G

021114

C0M104 : 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION
ENVSS 20% LEFT OFFSET TEST TEST NUMBER 071113

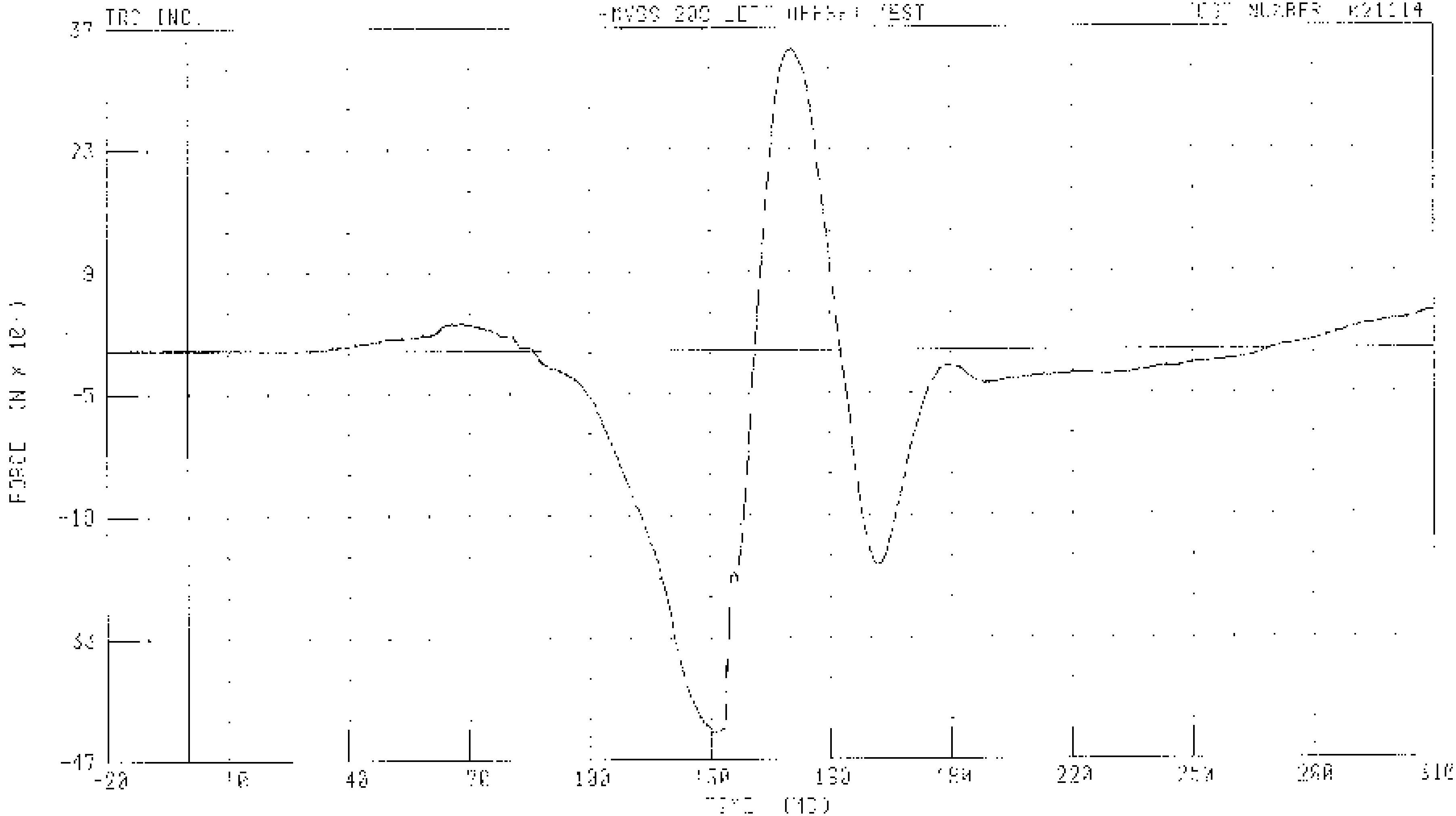


CHANNEL HFDRG2 FILTER CH CLASS 1000 PEAK DATA 57.15 G @ 112.00 MS 0.07 G @ -18.00 MS

G 27

021124

C3010A / 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER NECK X-AXIS SHEAR FORCE
FMVSS 208 LEFT OFFSET TEST

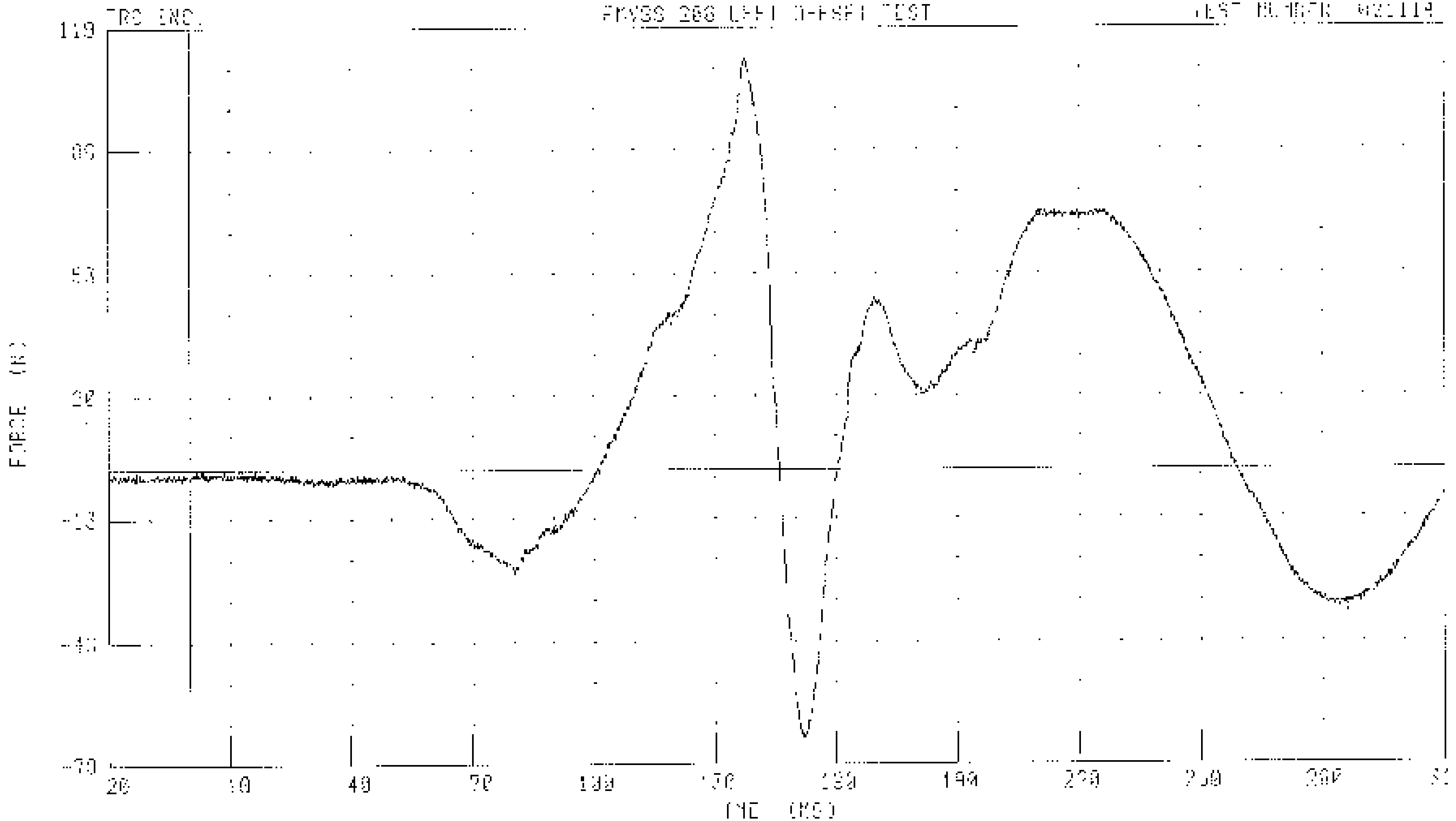


CHANNEL NCK XF2   FILTER: CFL CLASS 1000   PEAK DATA: 345.43 N @ 150.00 MS; -436.71 N @ 133.36 MS

021114

C03104 / 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER NECK Y AXIS SHEAR FORCE
FMVSS 208 LEFT OFFSET TEST

TEST NUMBER 021124



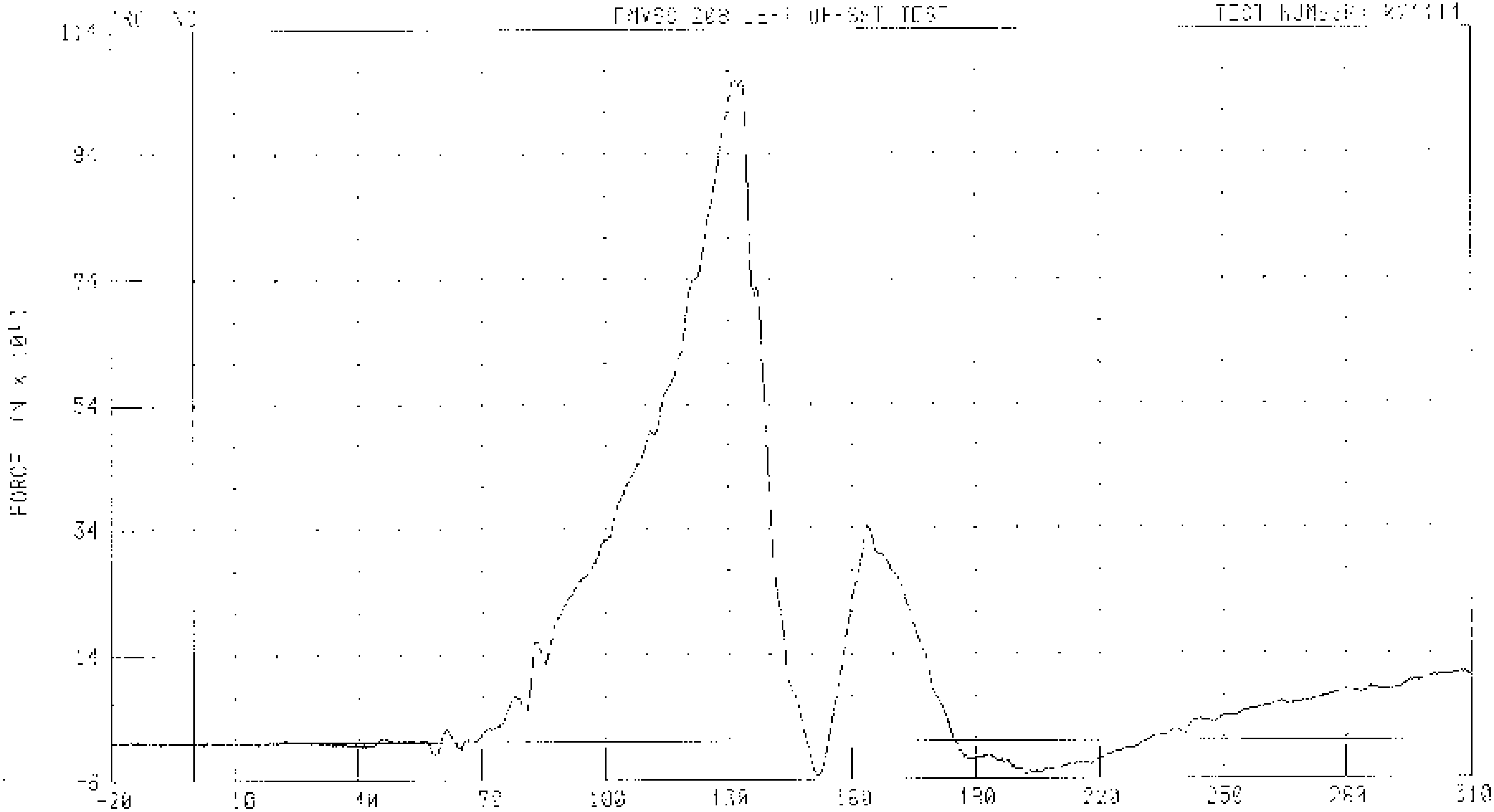
CHANNEL: NLAY2   FILTER: CFC CLASS 1000   PEAK DATA 111.13 N @ 137.30 MS, -71.95 N @ 152.90 MS

021124

CHEVROLET SUBURBAN 1500 2WD

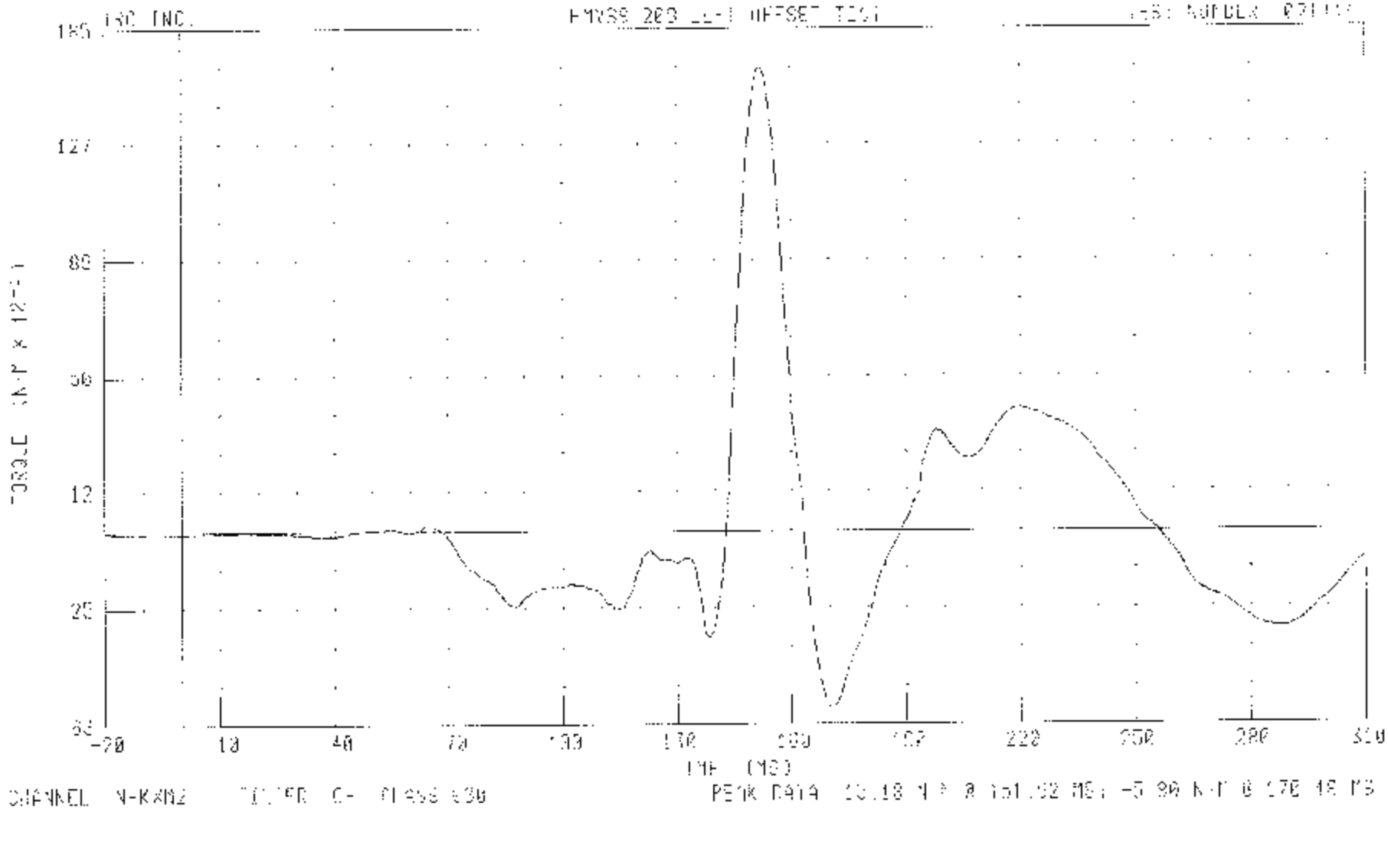
RIGHT FRONT PASSENGER NECK Z-AXIS AXIAL FORCE

FMVSS 208 LEFT OFF-SET TEST

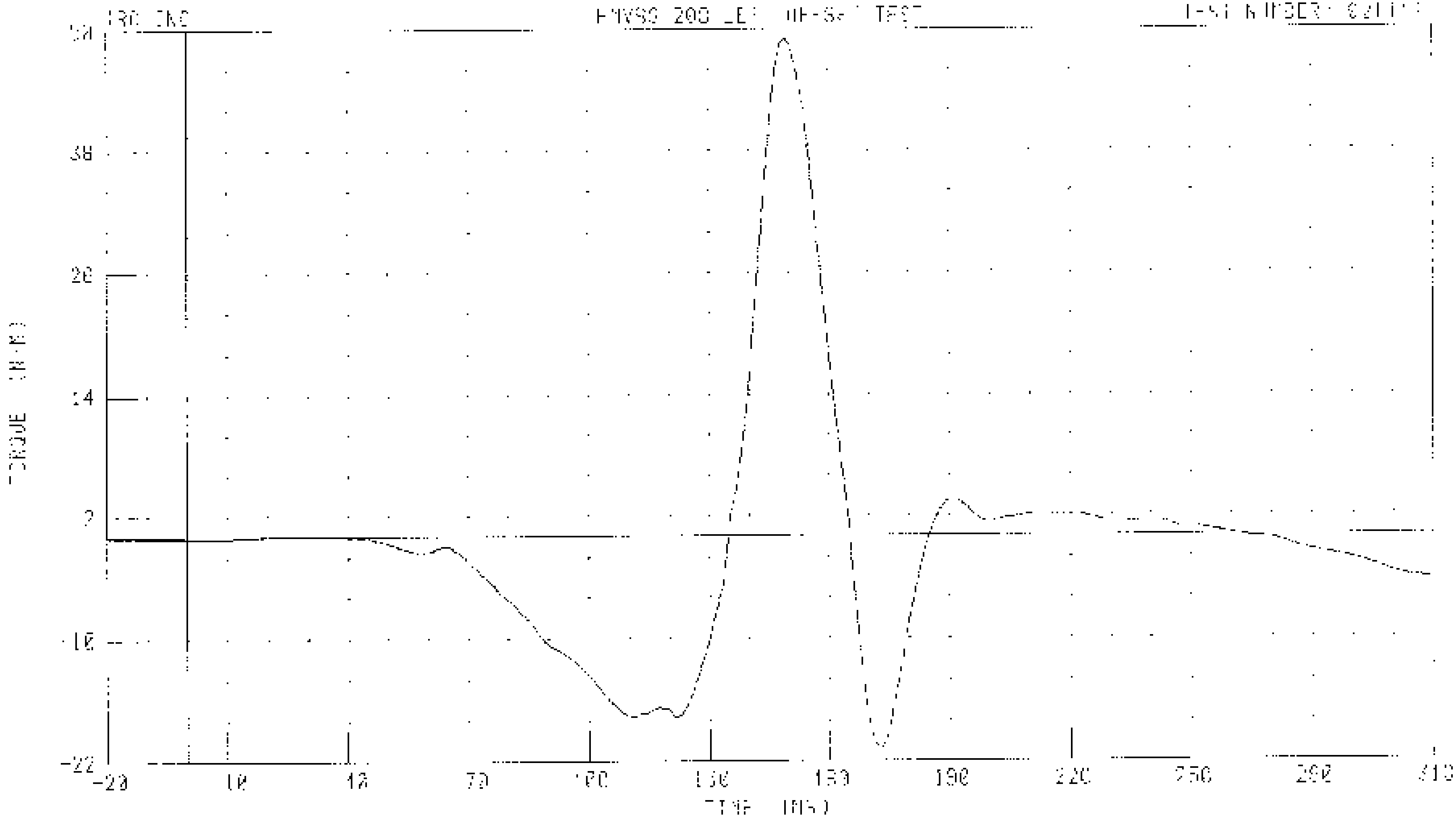


CHANNEL   FILTER: CFC CLASS 1000

PEAK DATA:

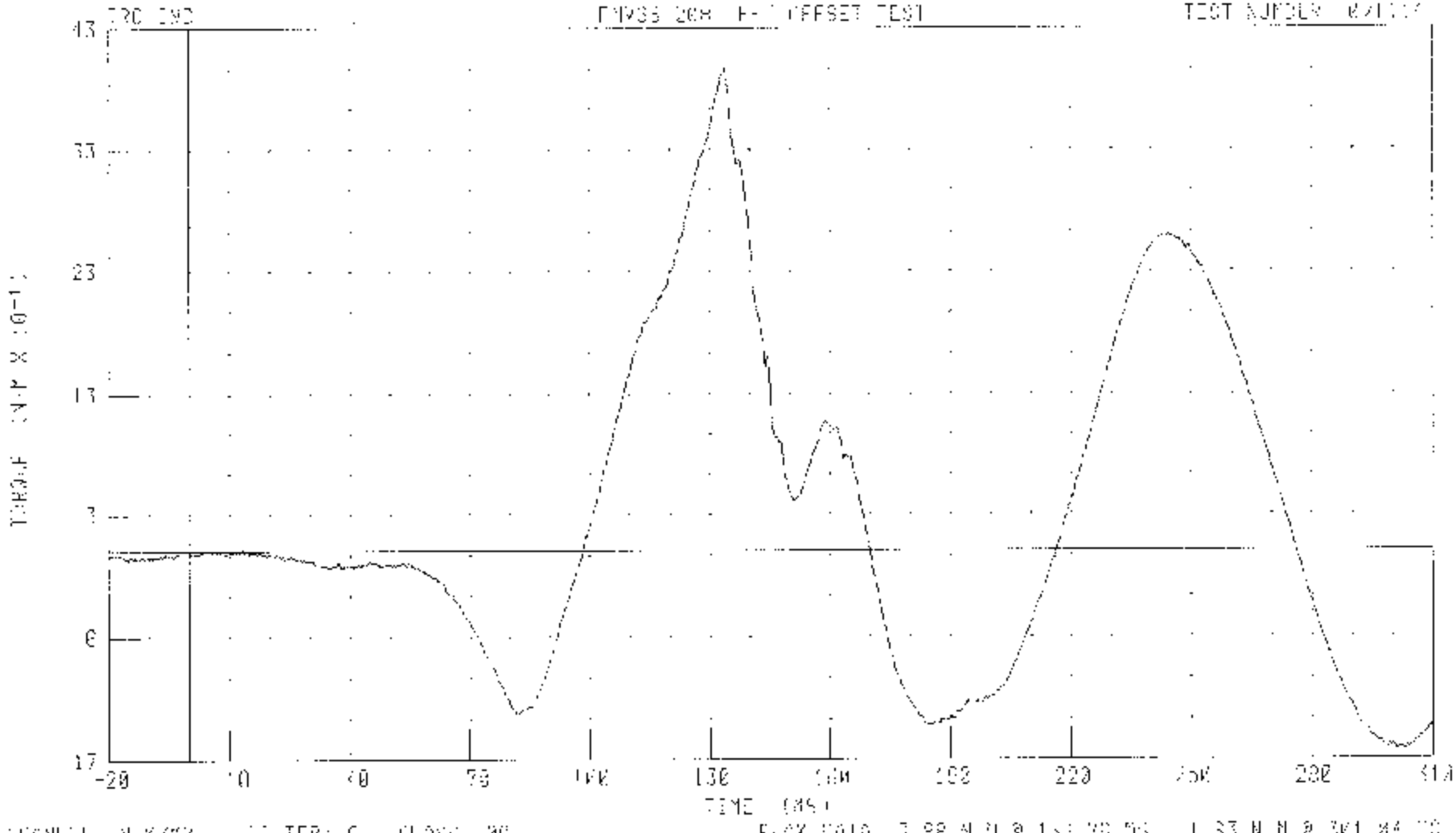

185
127
69
12
-45
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)

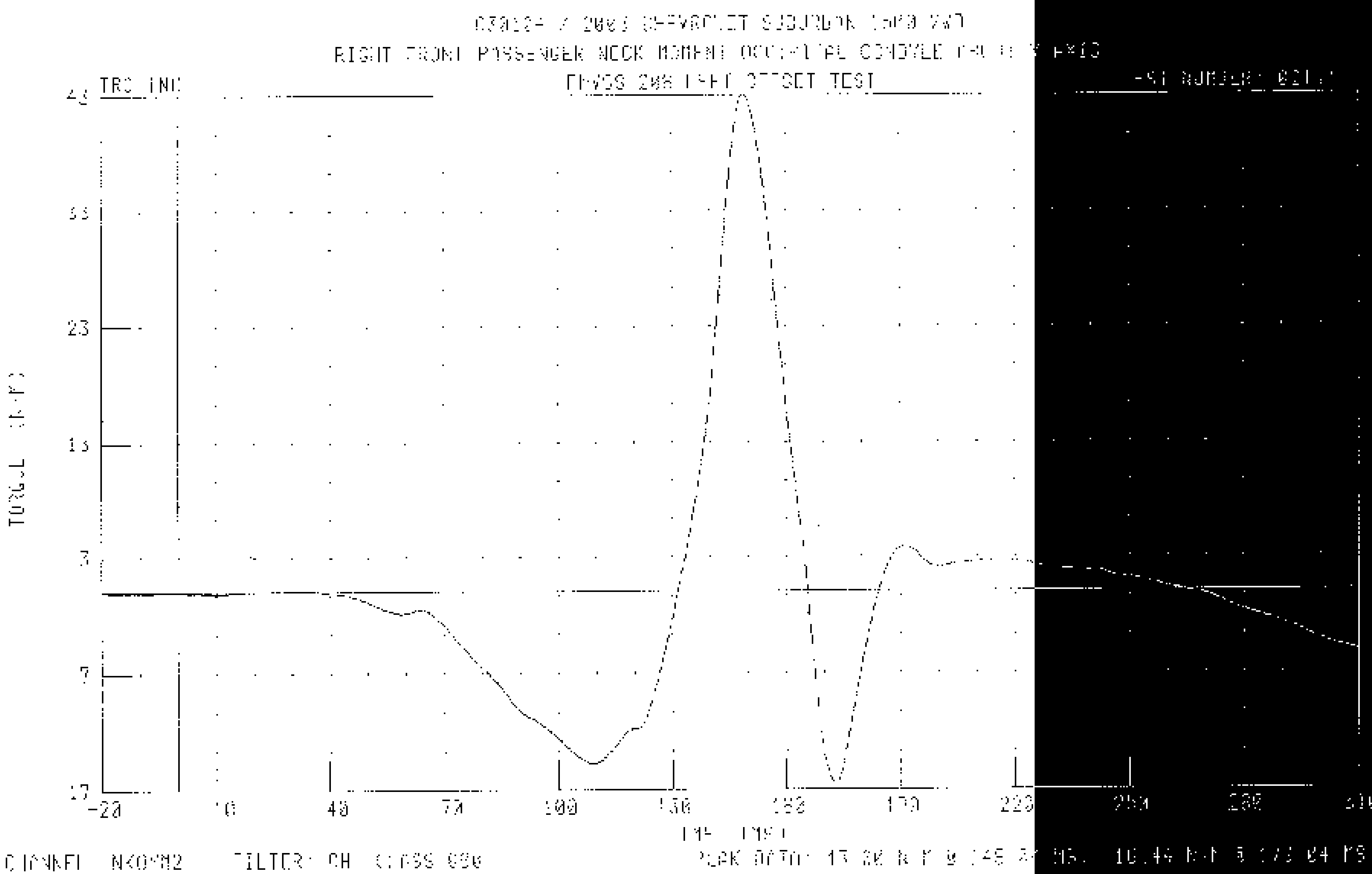
C30104 / 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER NECK MOMENT ABOUT Y AXIS
FMVSS 208 LEFT OFF-SET TEST
TEST NUMBER: 6211



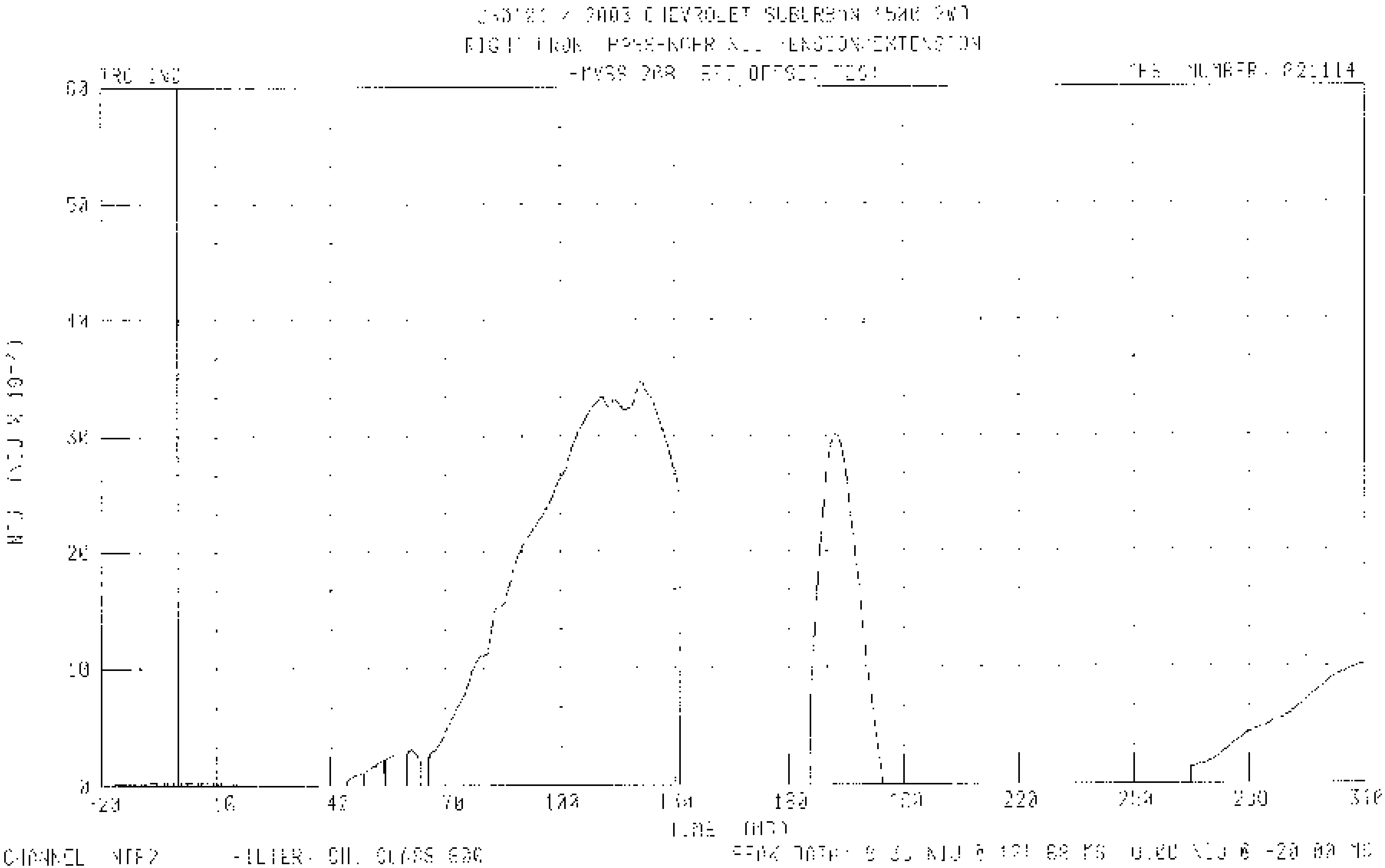
CHANNEL NFKY17 FILTER: CH CLASS 600
PEAK DATA 49.98 N M @ 149.30 MS; -20.79 N M @ 172.60 MS

021110


43
33
23
13
3
-7
-17
-20
0
40
70
100
130
160
190
220
250
280
310
TIME (MS)

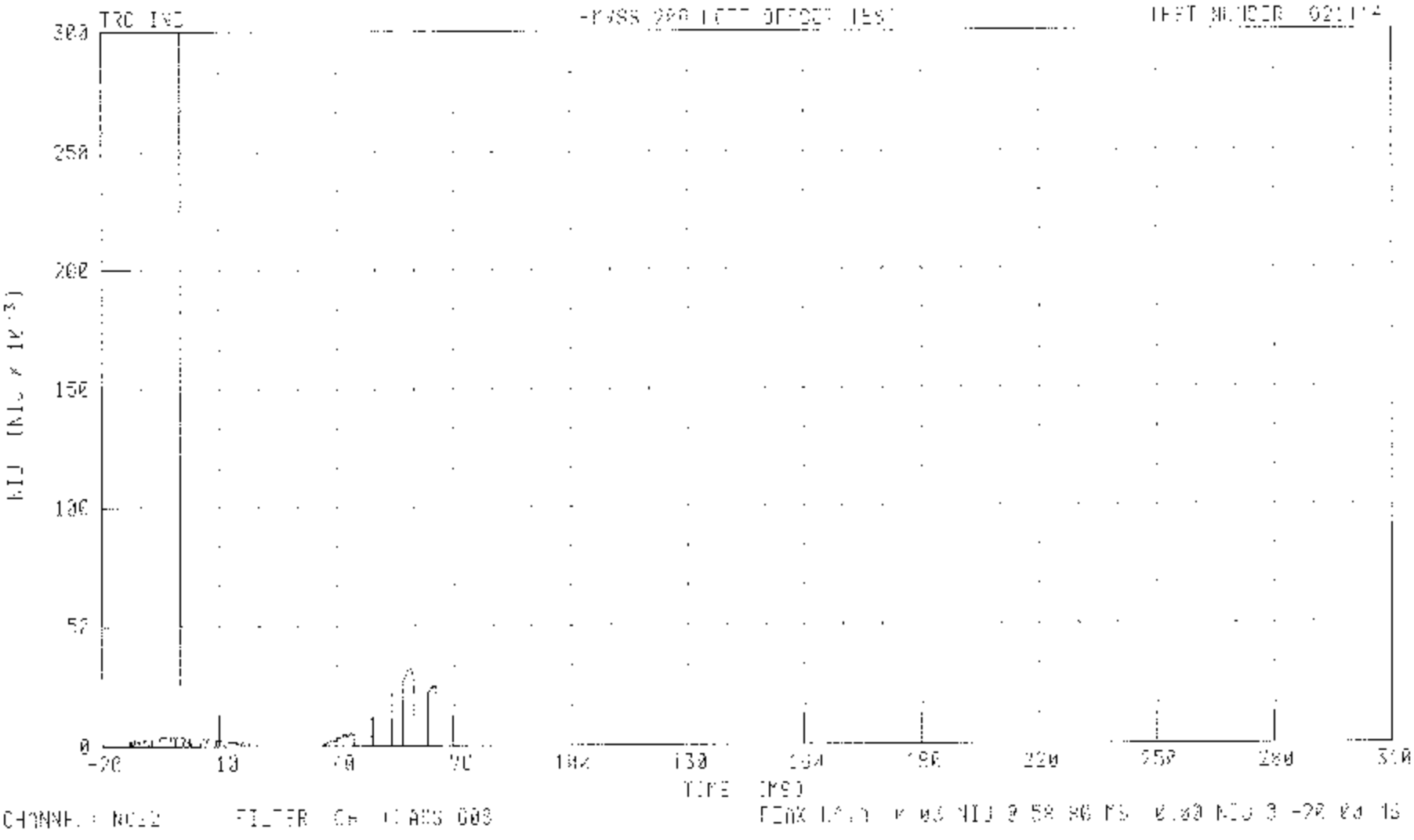


RIGHT FRONT PASSENGER NECK MOMENT OCCIPITAL CONDYLE
TRC INC
TORQUE (N-M)
TIME (MS)
43
33
23
13
3
-7
-17
-20
10
40
70
100
130
160
190
220
250
280
310


2003 CHEVROLET SUBURBAN
TEST NUMBER: 021114
TRC IND
NIJ (NIJ X 10-2)
TIME (MS)
CHANNEL: NIJ
FILTER: CFC CLASS 600
PEAK DATA:
0
10
20
30
40
50
60
-20
10
40
70
100
130
160
190
220
250
280
310

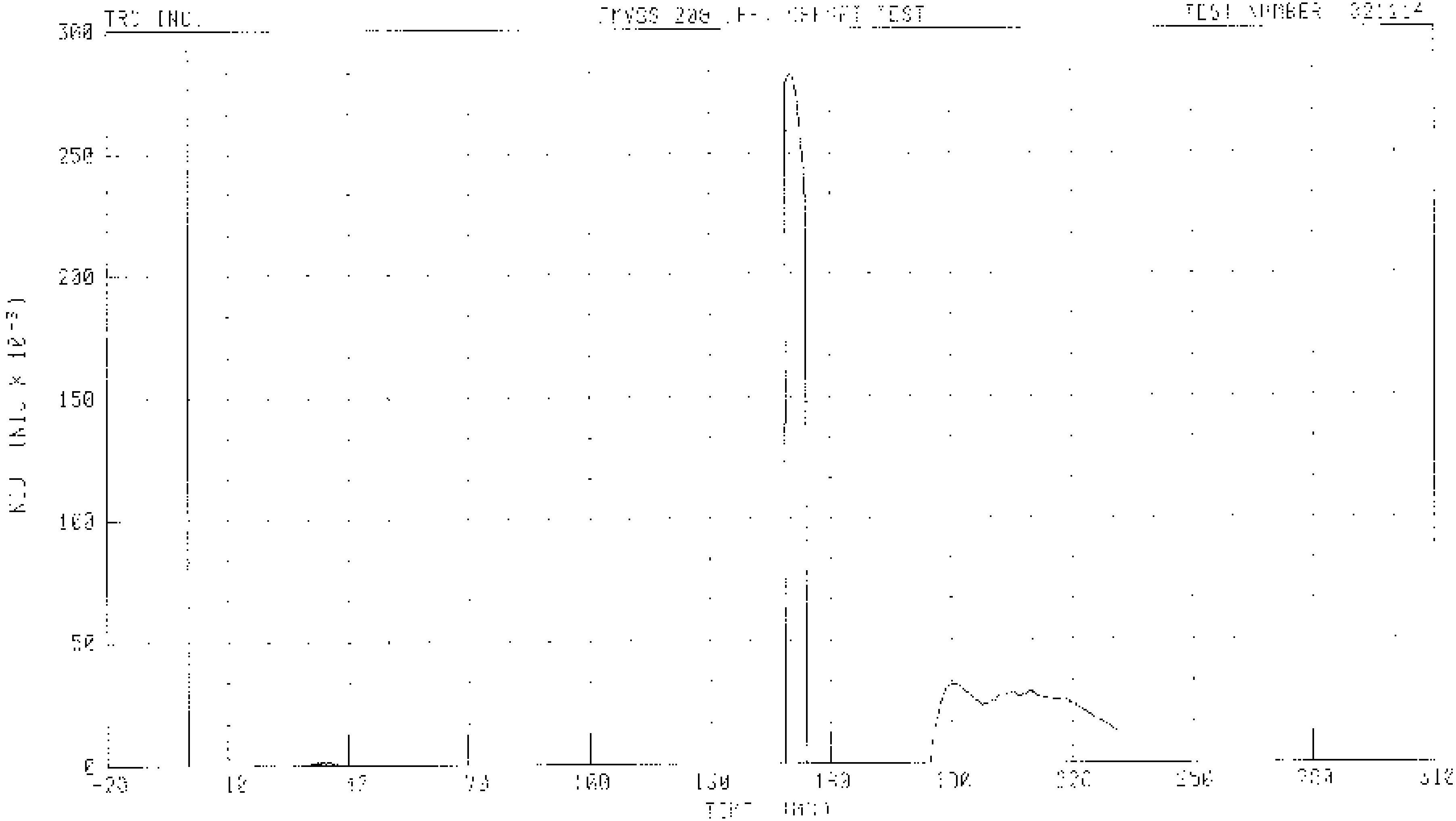
5-36

021114

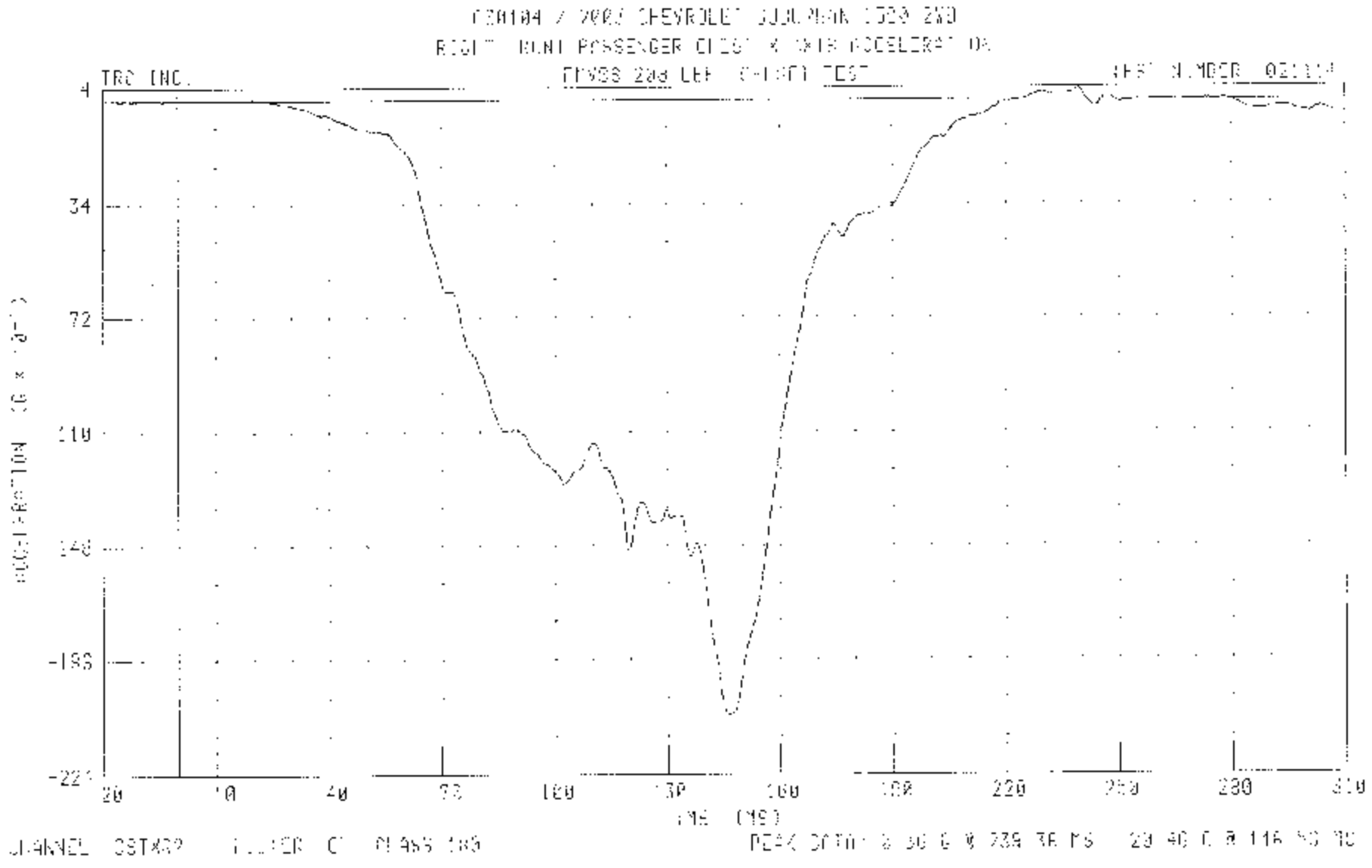

TRC IVC
300
250
200
150
100
50
0
-20
10
70
130
190
220
250
280
310
TIME (MS)

030104 / 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER NIJ COMPRESSION/FLEXION
FMVSS 208 LEFT OFFSET TEST

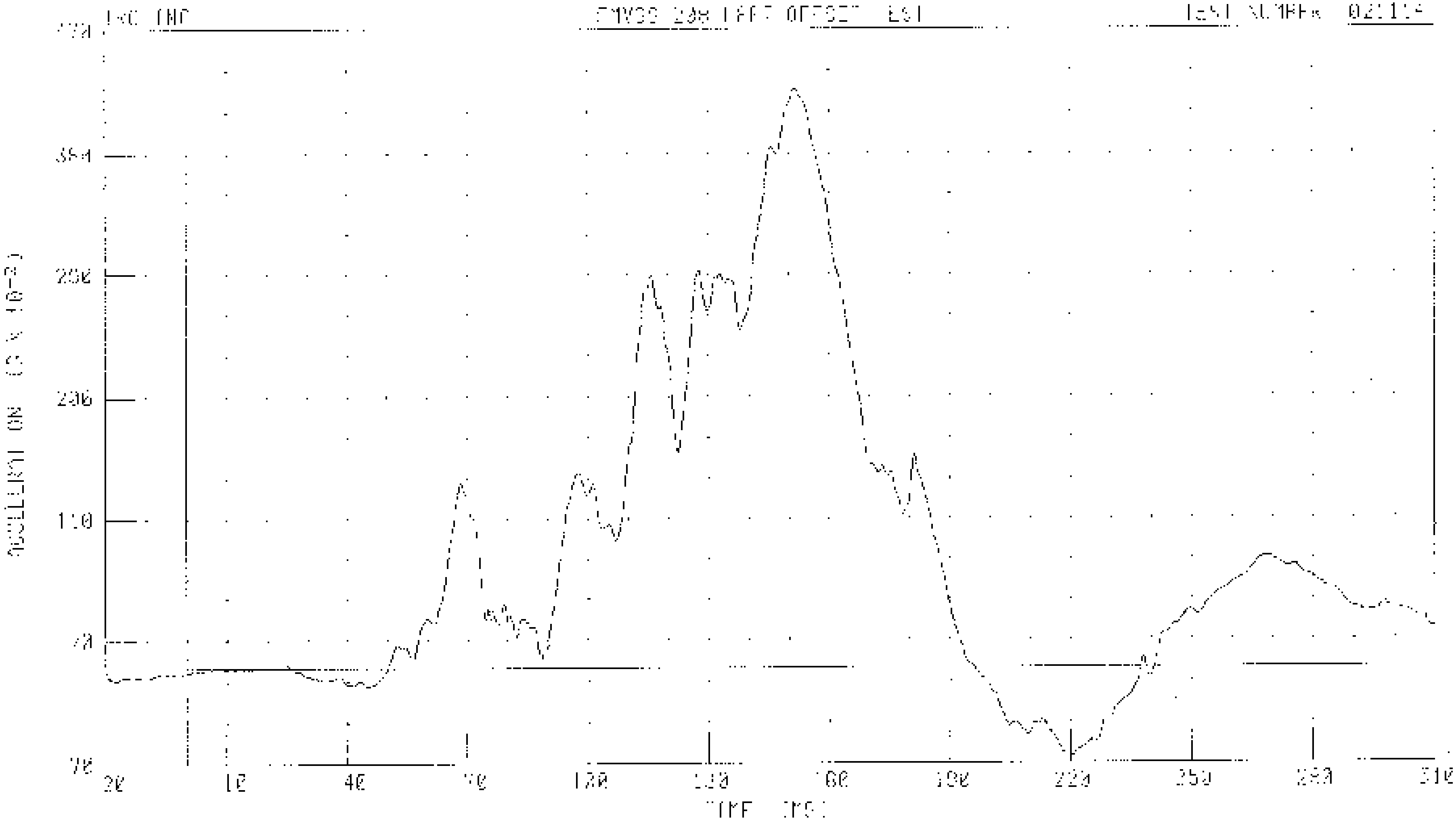
TRC INC. TEST NUMBER 030104



CHANNEL NCI2 FILTER: CH CLASS 600 PEAK DATA 0.28 NIJ @ 150.40 MS, 0.00 NIJ @ -10.00 MS

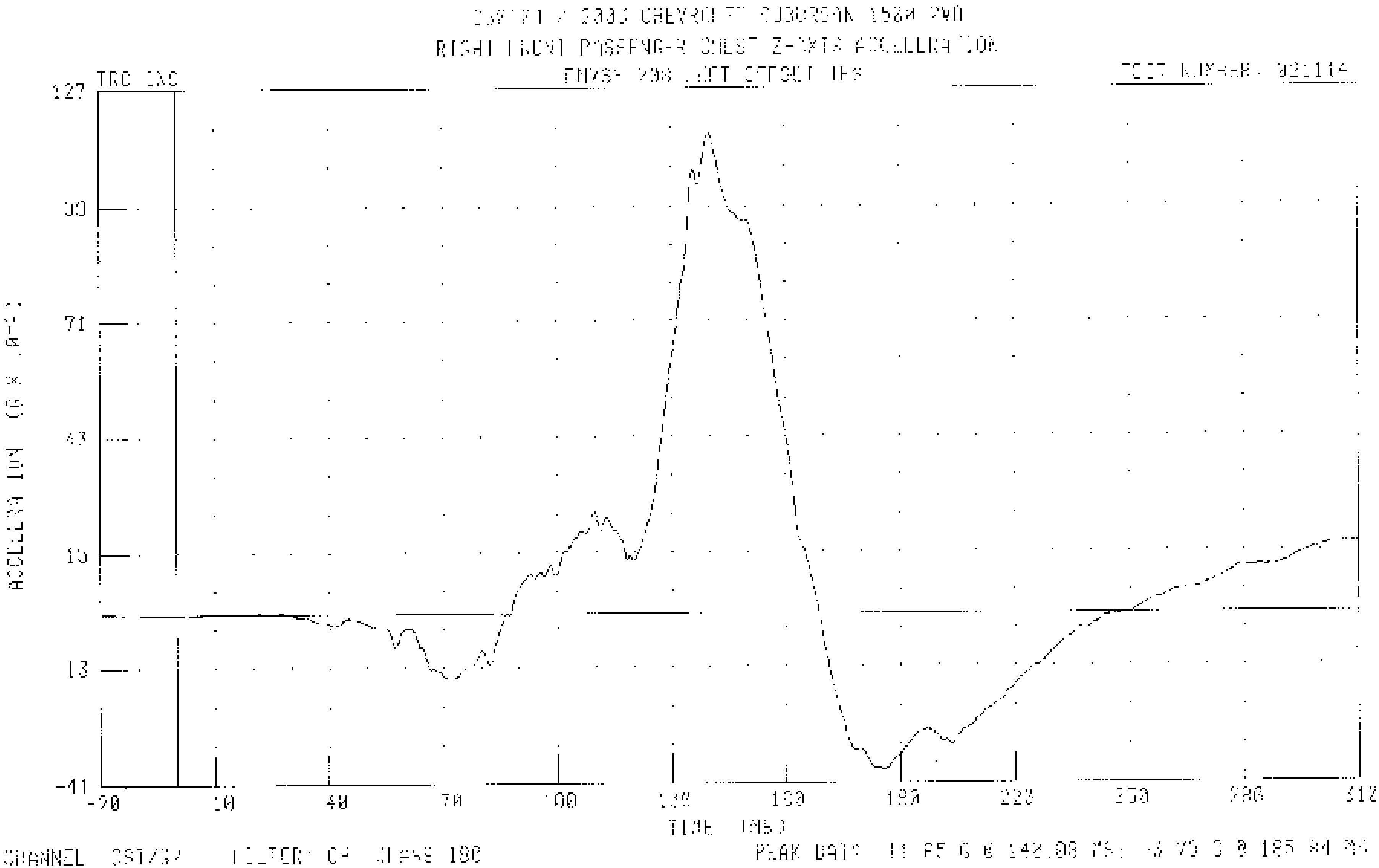

TRC INC.
4
34
72
110
148
-185
-221
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
TIME (MS)

030104 - 2003 CHEVROLET SUBURBAN 1500 2WD
RIGHT FRONT PASSENGER CHEST Y AXIS ACCELERATION
FMVSS 208 LEFT OFFSET TEST

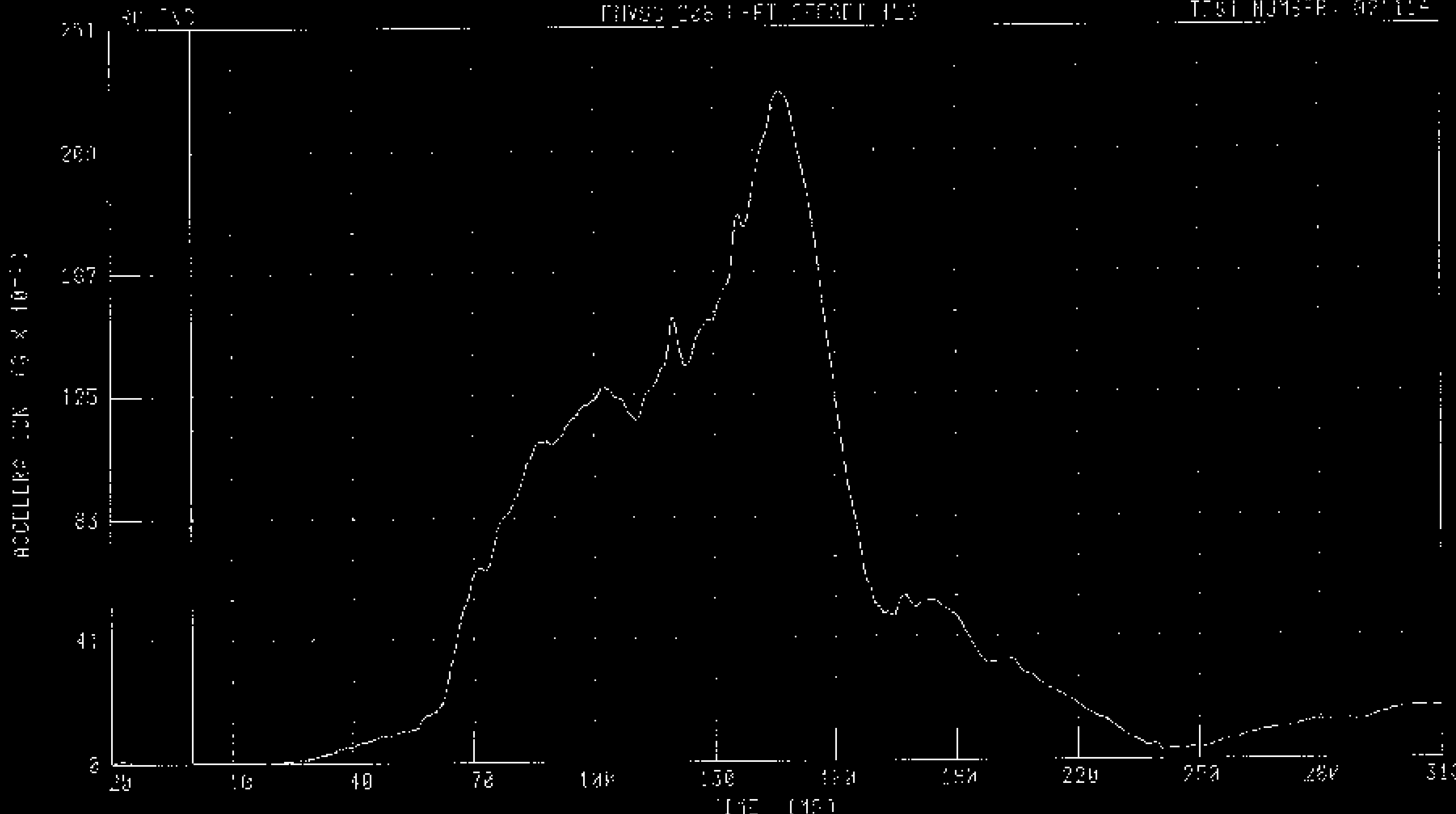


CHANNEL: C3TYG2   FILTER: CH. CLASS 180   PEAK DATA: 4.76 G @ 151.76 MS   -3.52 G @ 220.18 MS

021114

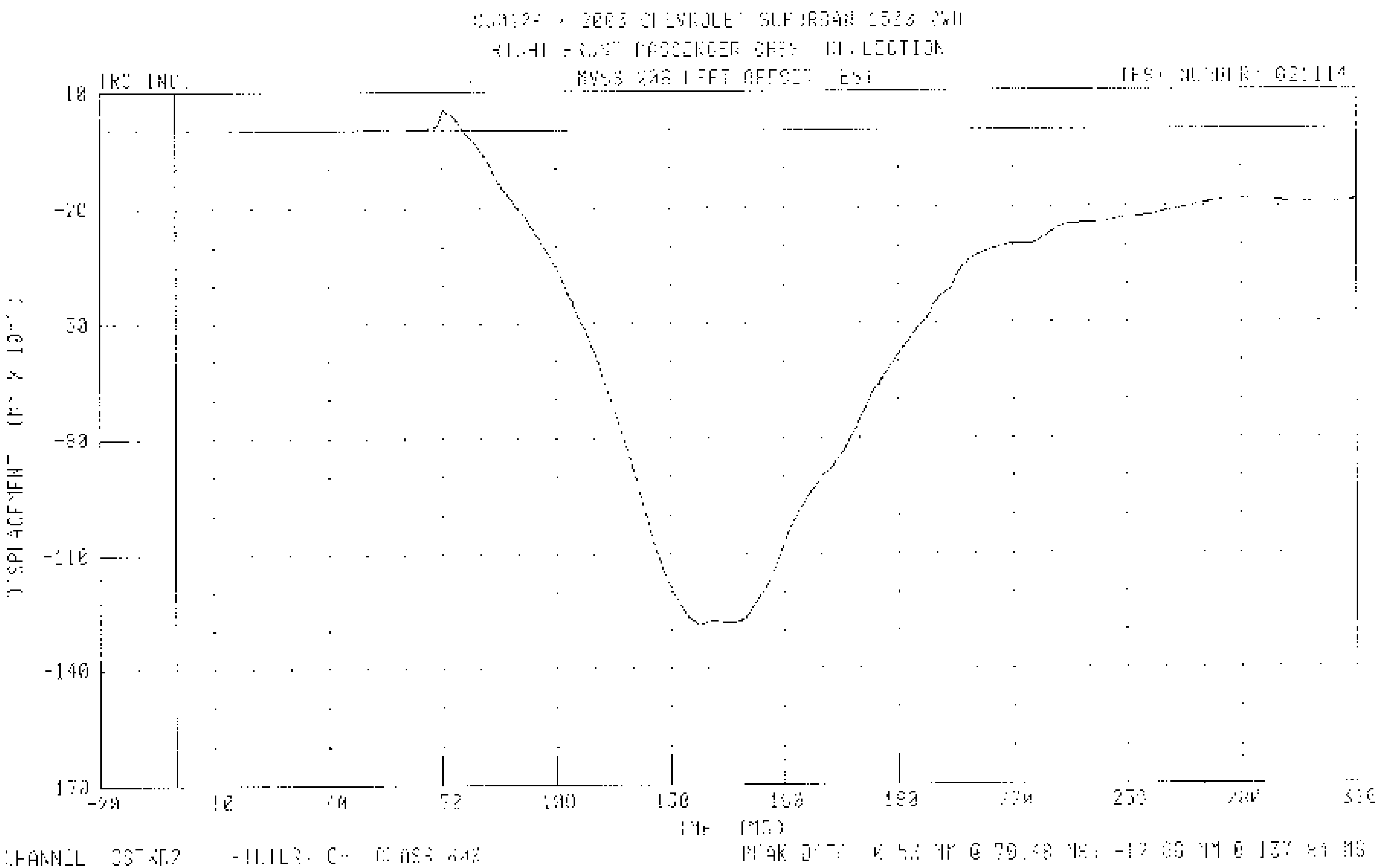

CHEVROLET
RIGHT FRONT
TEST NUMBER: 921114
127
99
71
43
15
13
-41
-20
10
40
70
100
130
160
190
220
250
280
312
TIME (MS)
CHANNEL
FILTER: CF CLASS 180
PEAK DATA: G @ 142.08 MS; @ 185.84 MS

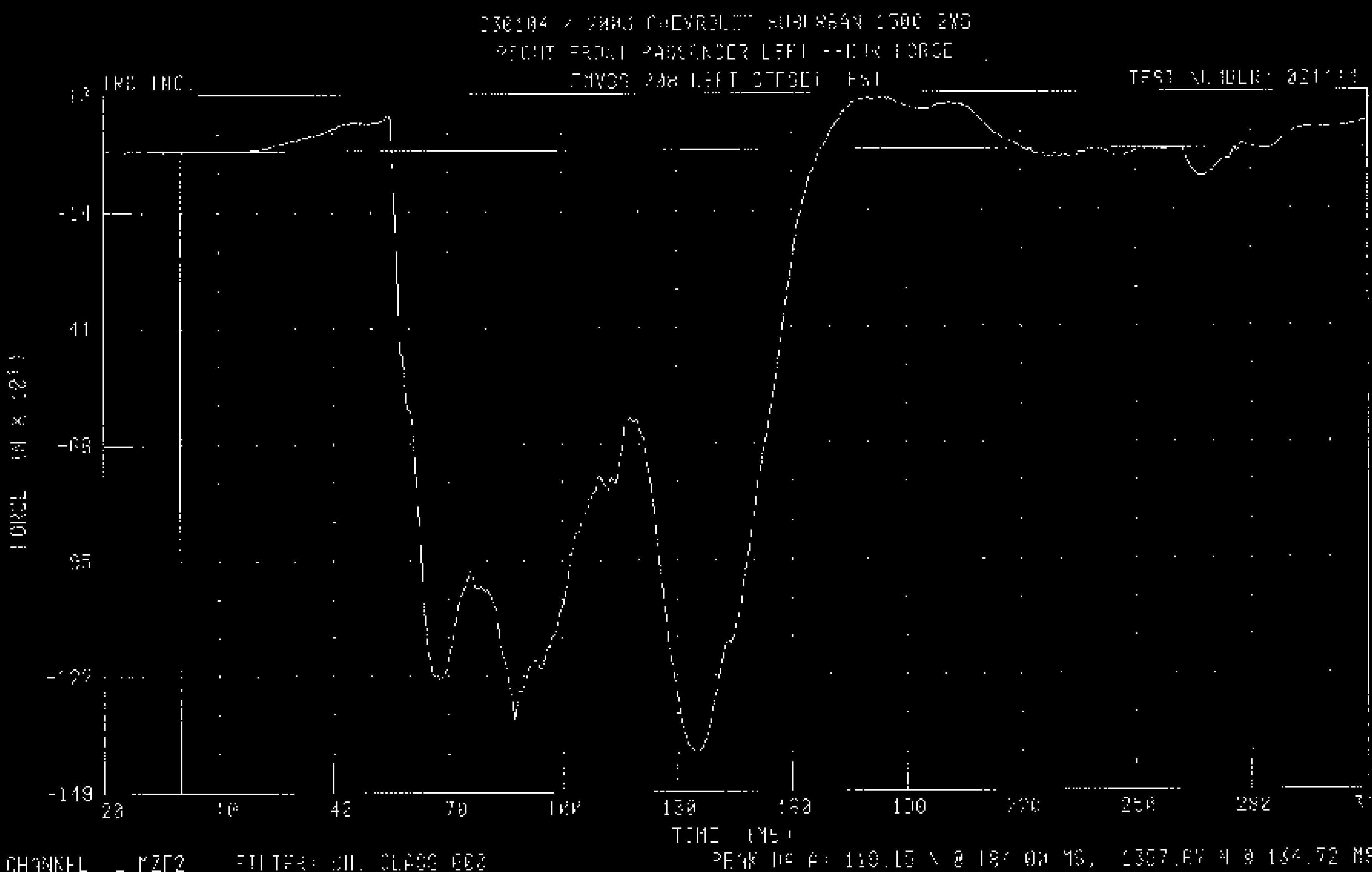
C30104 - 2023 CHEVROLET SUBURBAN 1500 4WD
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION
TRWSS 235 LEFT OFFSET 40 TEST NUMBER: 02114



CHANNEL: CHTRC2 FILTER: CFC CLASS 180 PEAK DATA: 22.97 G @ 140.42 MS; 0.00 G @ -20.50 MS

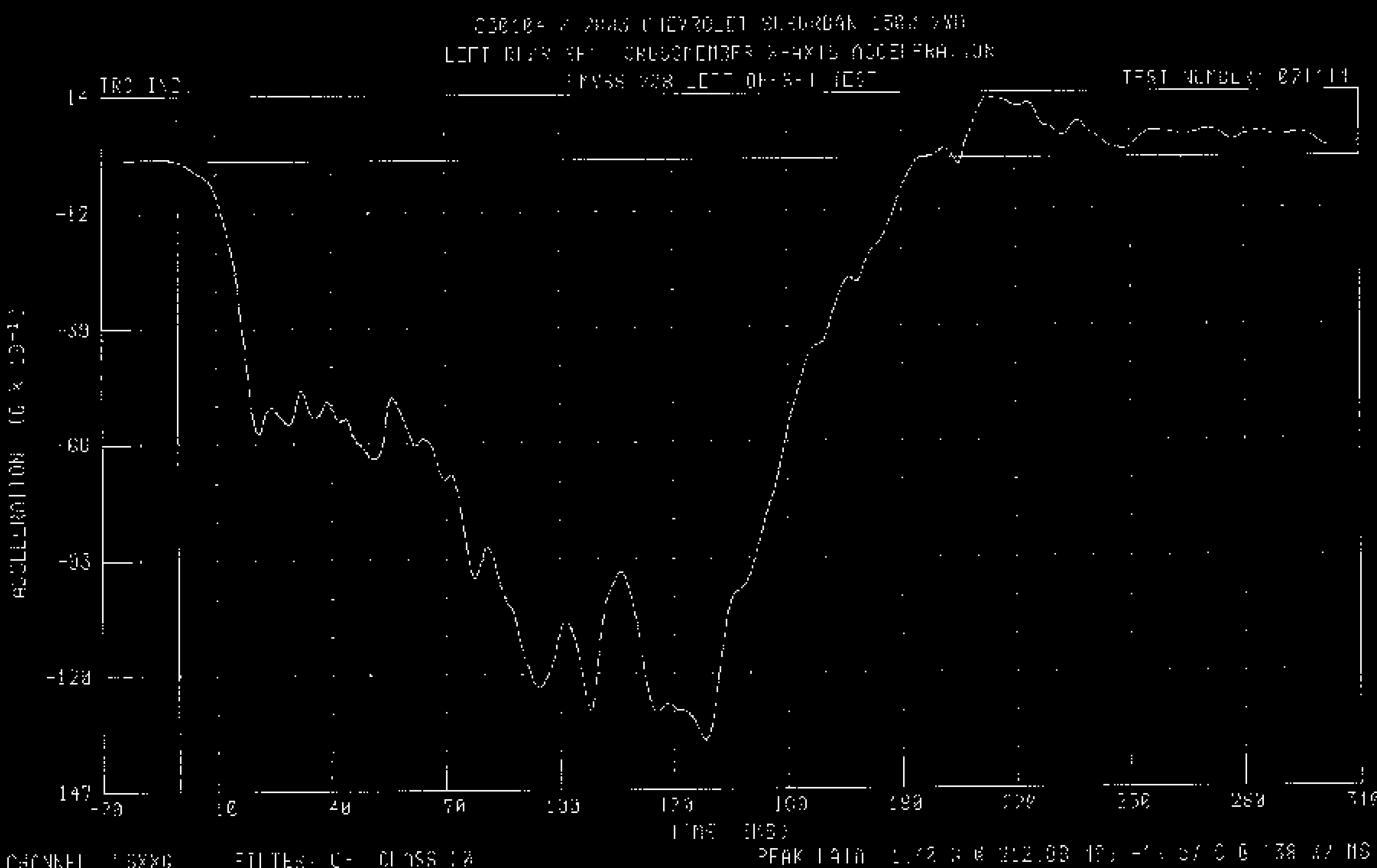
021114

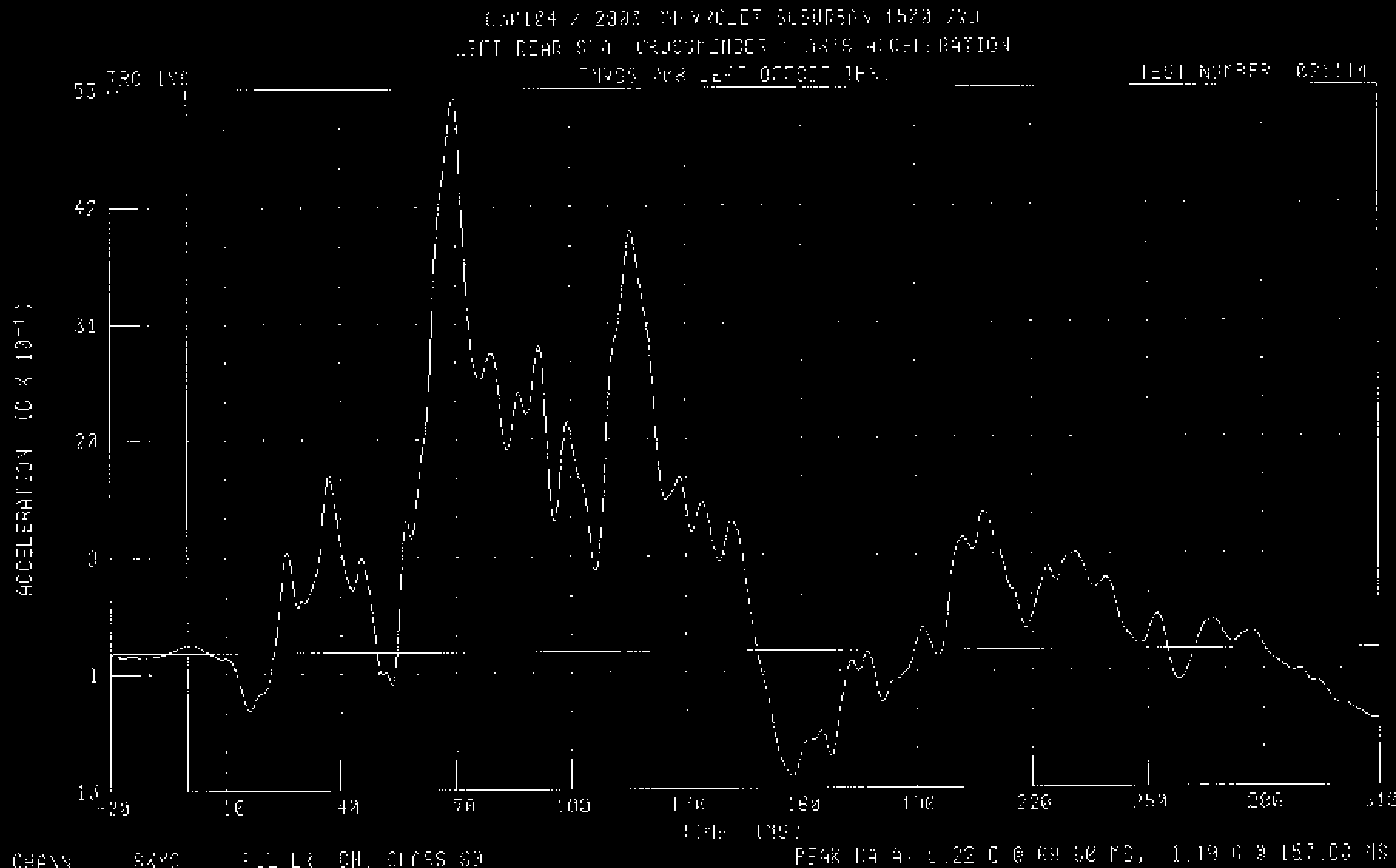

2003 CHEVROLET SUBURBAN
TRC INC.
TEST NUMBER: 021114
DISPLACEMENT
TIME (MS)
CHANNEL
PEAK DATA
10
-20
-50
-80
-110
-140
-170
-20
10
40
72
100
130
160
190
250
310

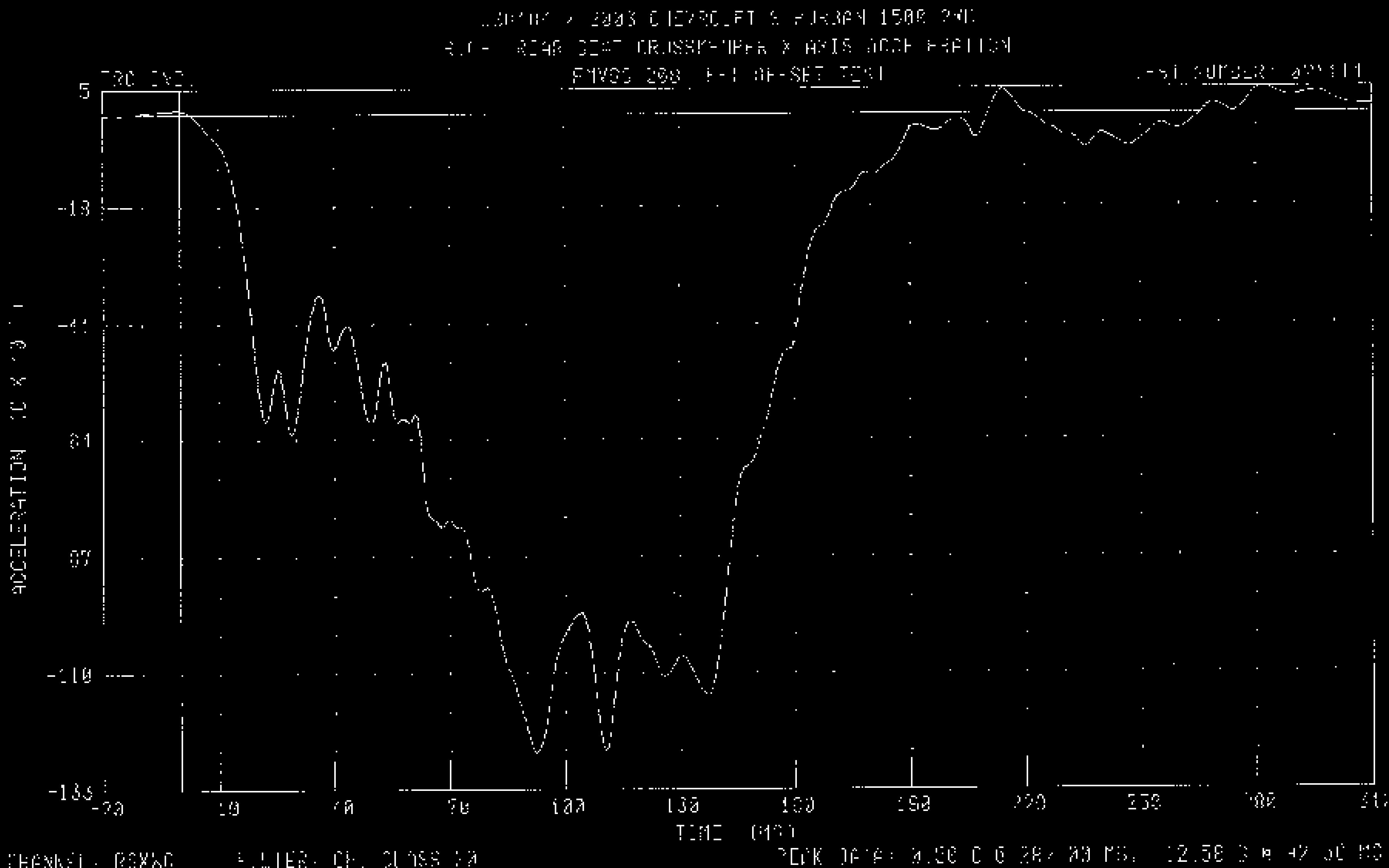


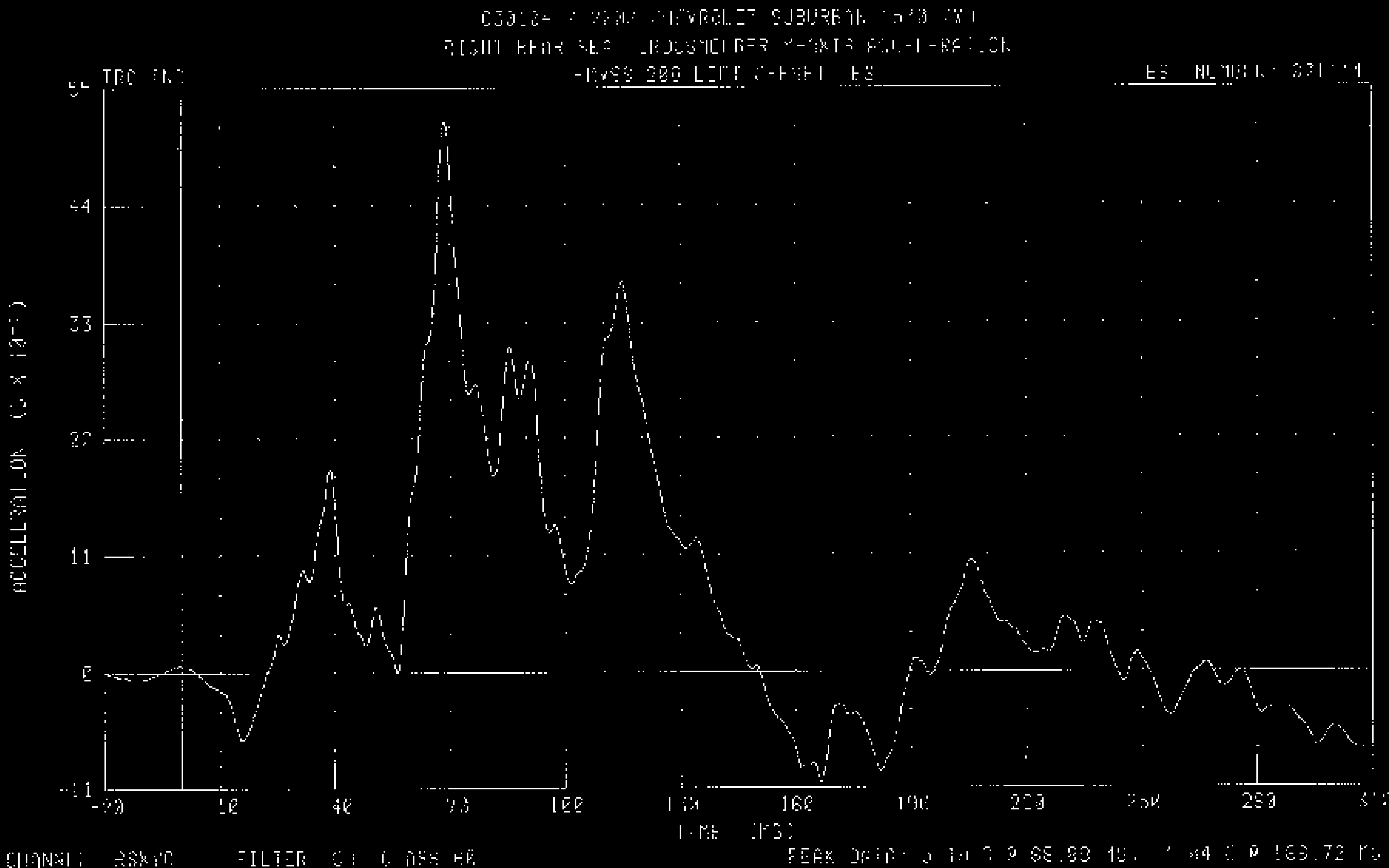
TRC INC.
13
41
-68
95
-149
20
70
130
190
310
TIME (MS)
CHANNEL

FORCE (N x 10³)
TIME (MS)

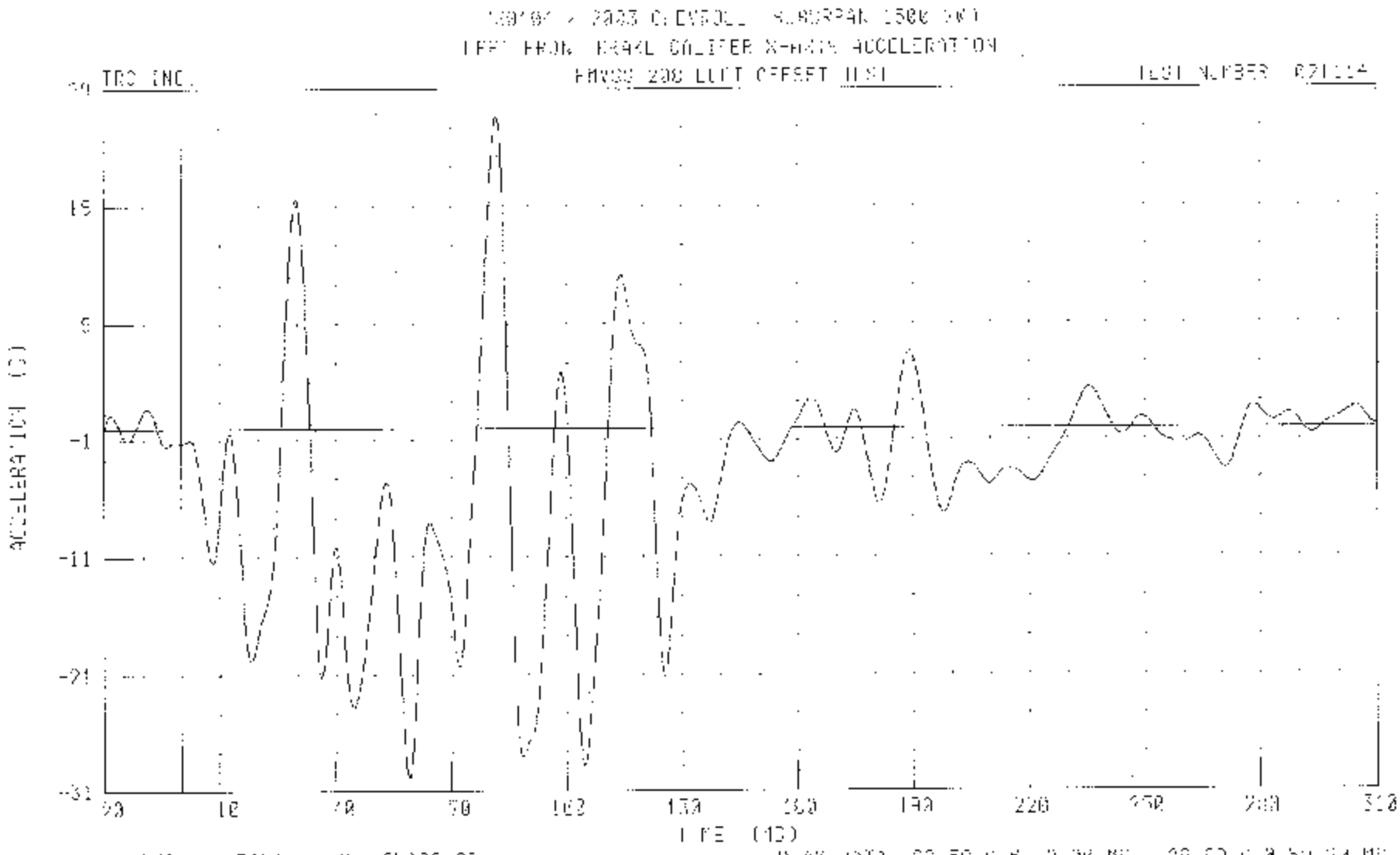

TRC INC.
FMVSS 208
TEST NUMBER
14
-12
-60
-93
-120
147
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
ACCELERATION (G X 10-1)
CHANNEL
FILTER
PEAK DATA


ACCELERATION
TEST NUMBER
53
42
31
20
9
1
CHANNEL
PEAK


5
-13
-41
-61
-87
-110
-133
-20
10
40
70
100
130
160
190
220
250
280
310
ACCELERATION
TIME
CHANNEL: RSXAC
FMVSS 208

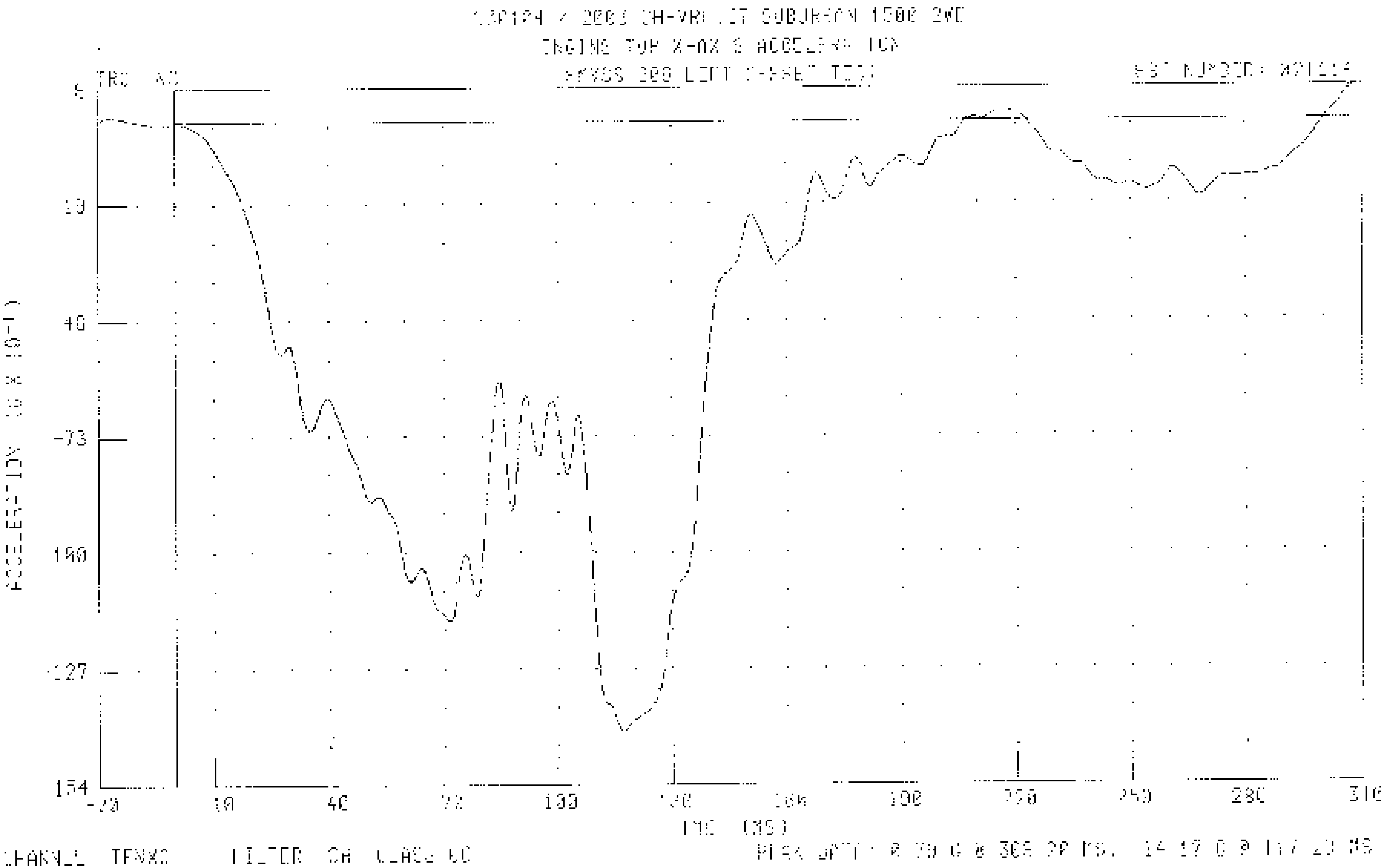


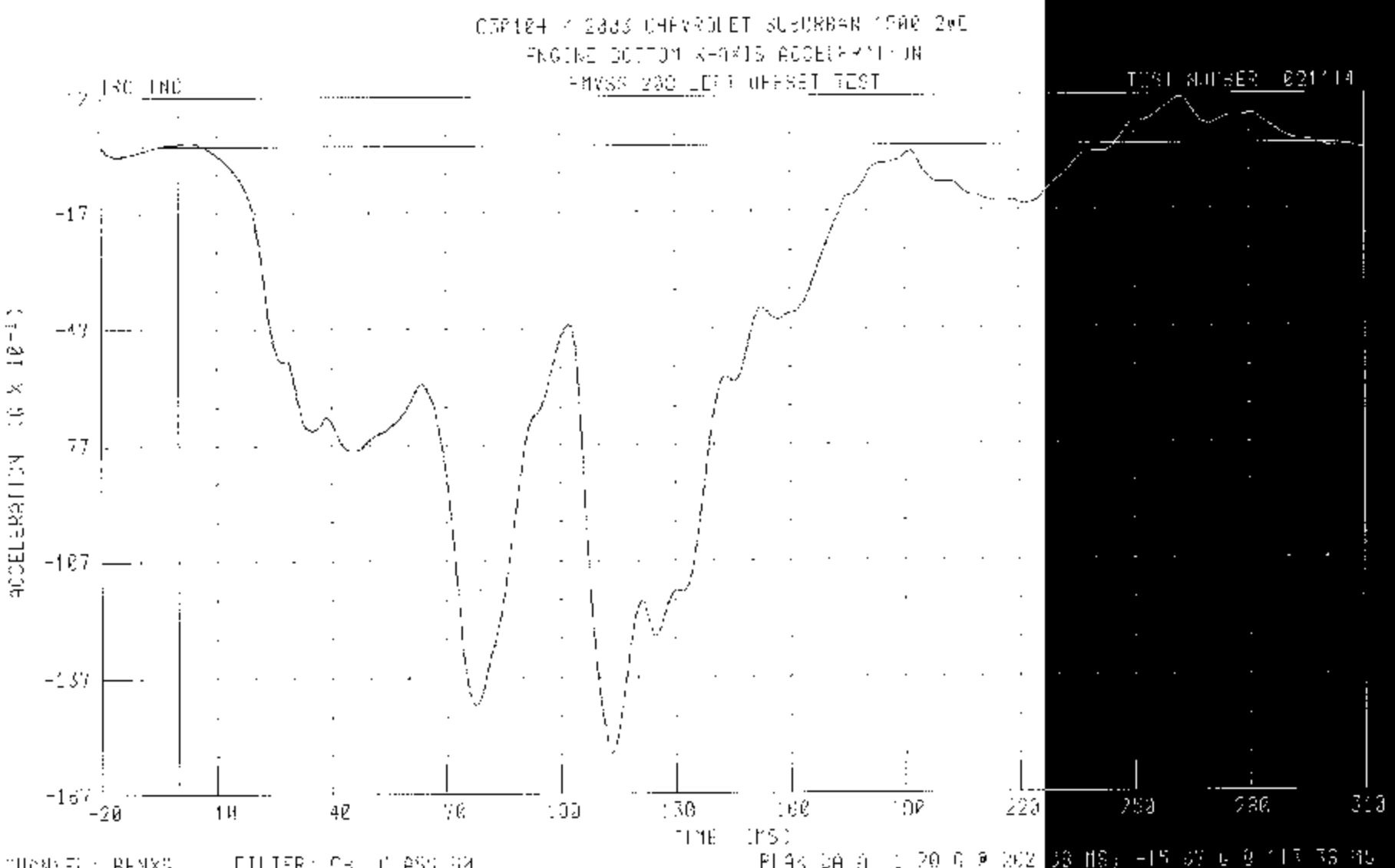
CHEVROLET SUBURBAN
44
33
11
0
-11
-20
10
40
100
160
190
220
280
FILTER
CHANNEL

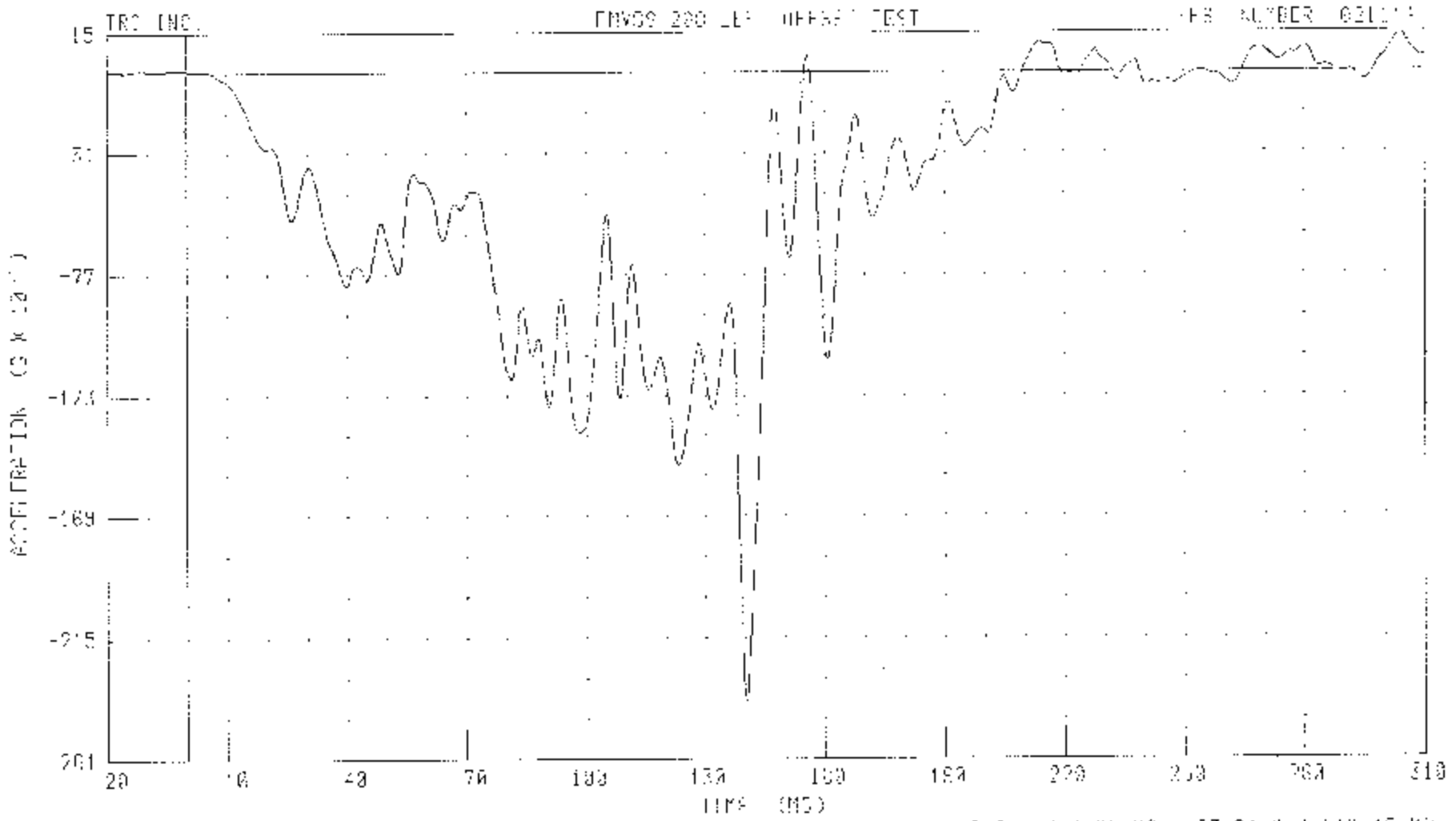

TRC INC.
TEST NUMBER 021114
ACCELERATION (G)
5
0
-5
-10
-15
-20
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
TIME (MS)

021114

ACCELERATION (G)

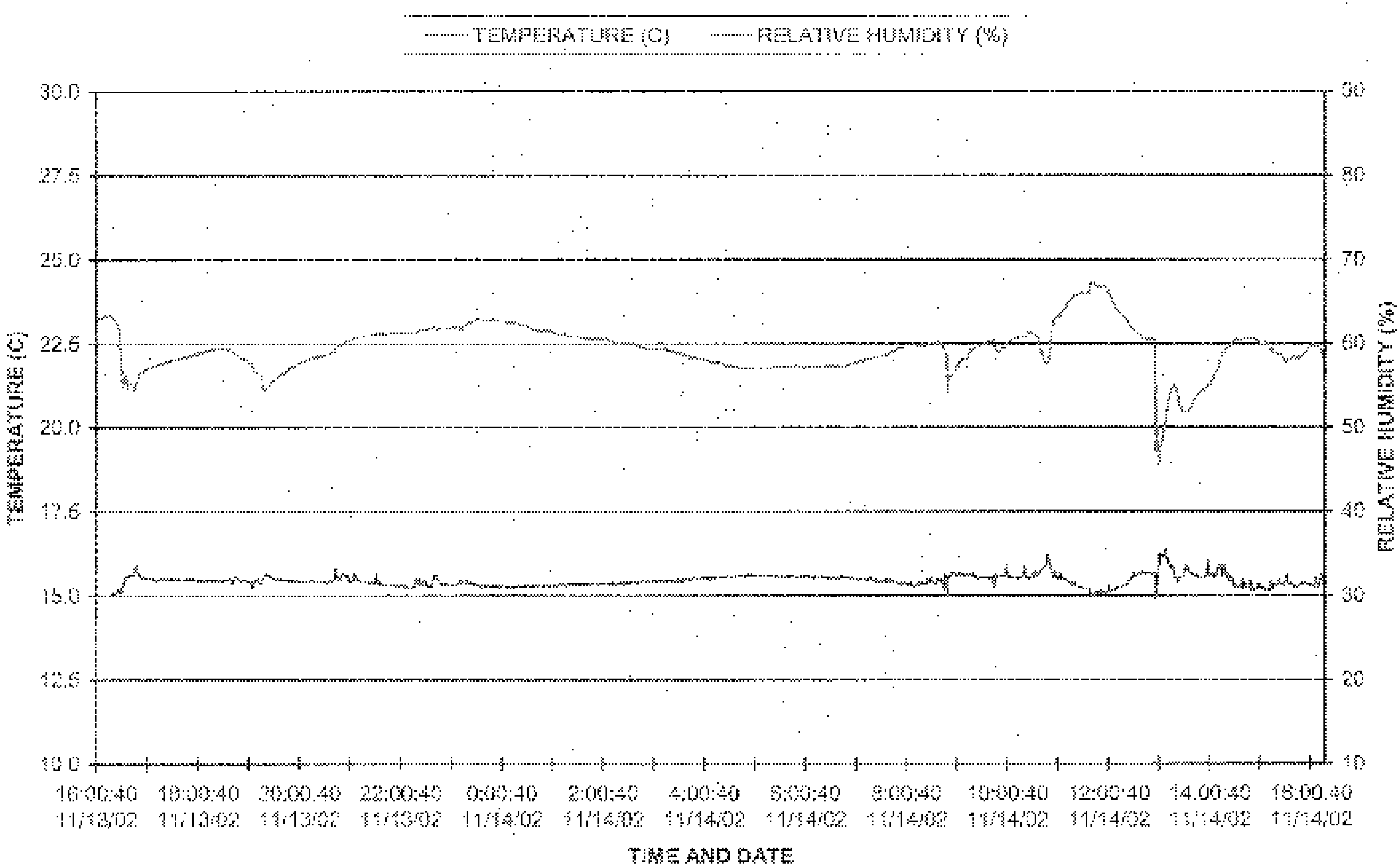

6
19
46
-73
100
-127
154
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)


CSP104 / 2003 CHEVROLET SUBURBAN 1500 2WD
ENGINE BOTTOM X-AXIS ACCELERATION
NHTSA 20G LOW OFFSET TEST
TEST NUMBER 021114
ISO IND
-17
-47
77
-107
-137
-167
-20
10
40
70
100
130
160
190
220
250
280
310
TIME (MS)
CHANNEL: BMXS
FILTER: CFC CLASS 60


TRC INC.
15
31
-77
-124
-169
-215
261
20
40
70
100
130
160
190
220
250
280
310
TIME (MS)

ACCELERATION (G x 10-1)
TIME (SEC)

TEMPERATURE AND RELATIVE HUMIDITY CHART 021114



Section 7

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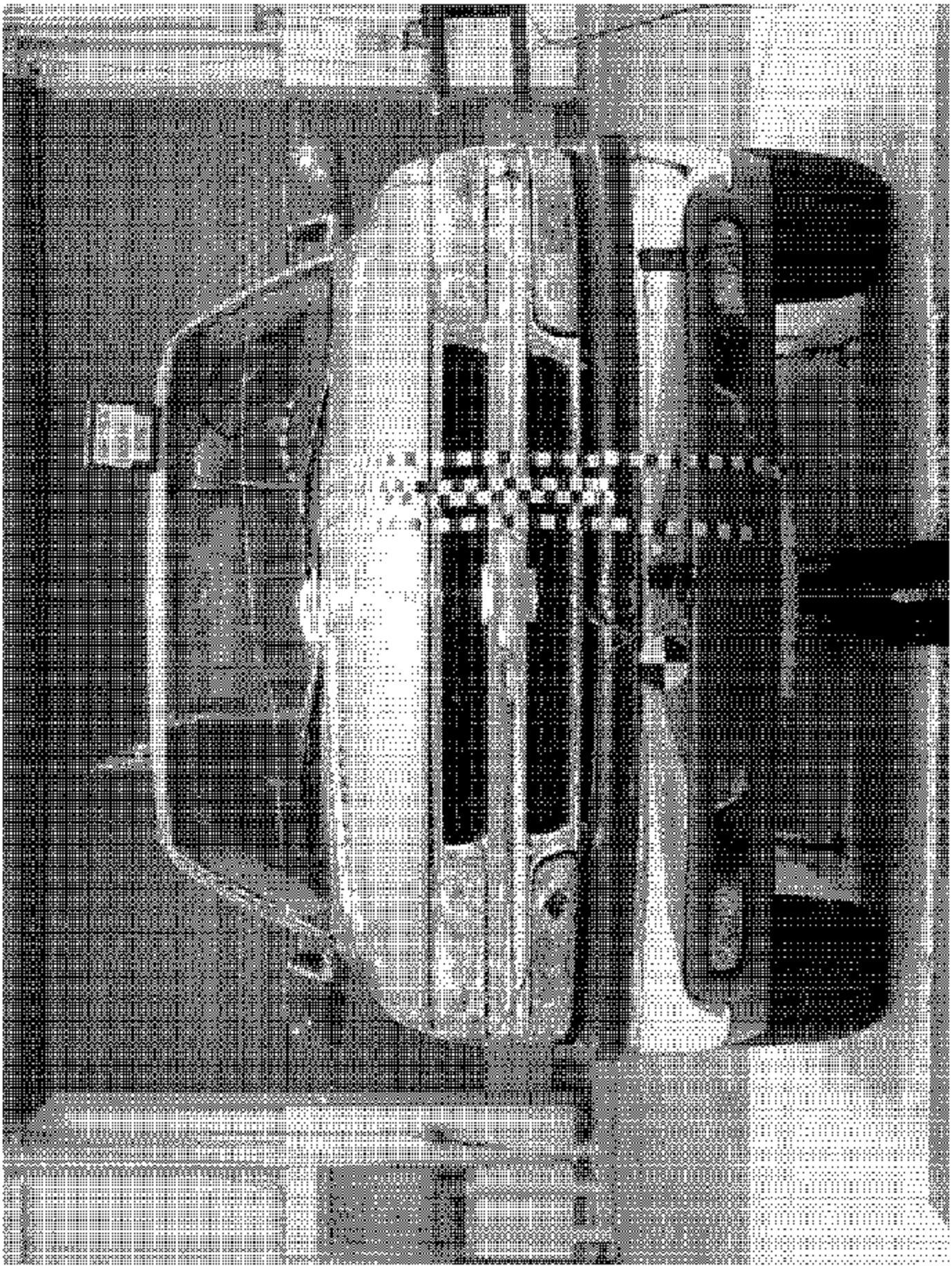

Image 1 Pre-Test Front View

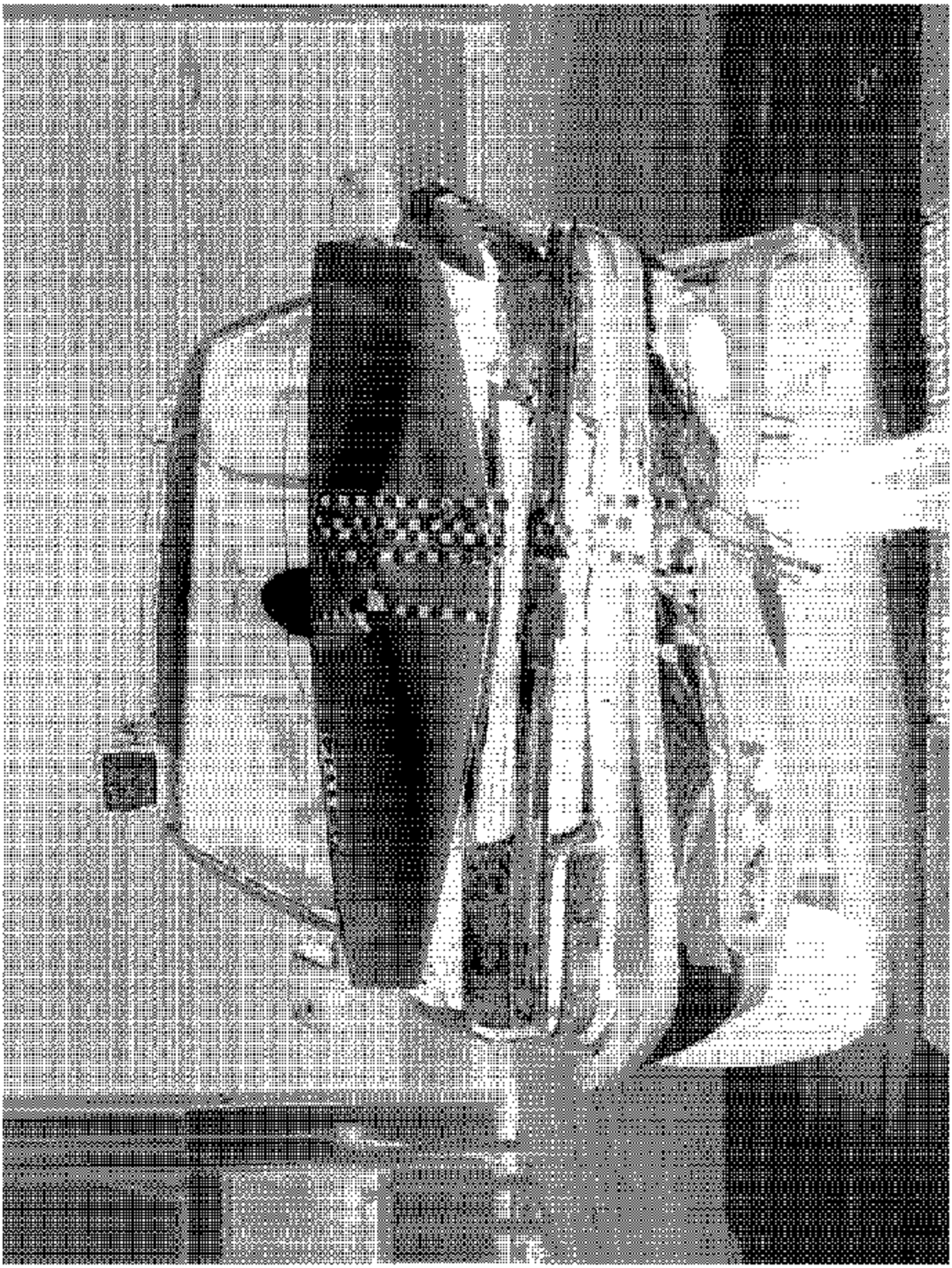

Image 2 Post-Test Front View

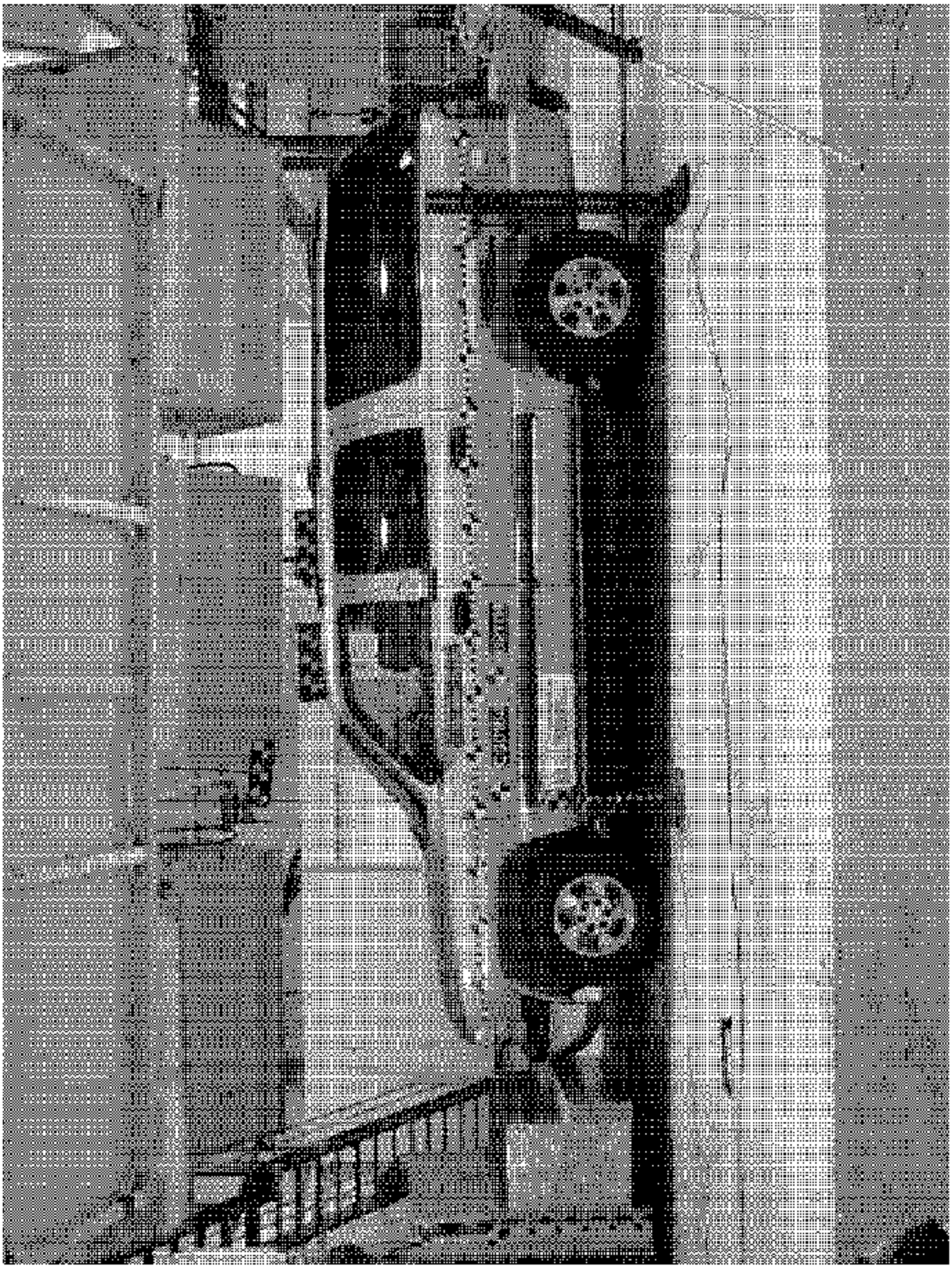

Image 3 Pre-Test Left Side View

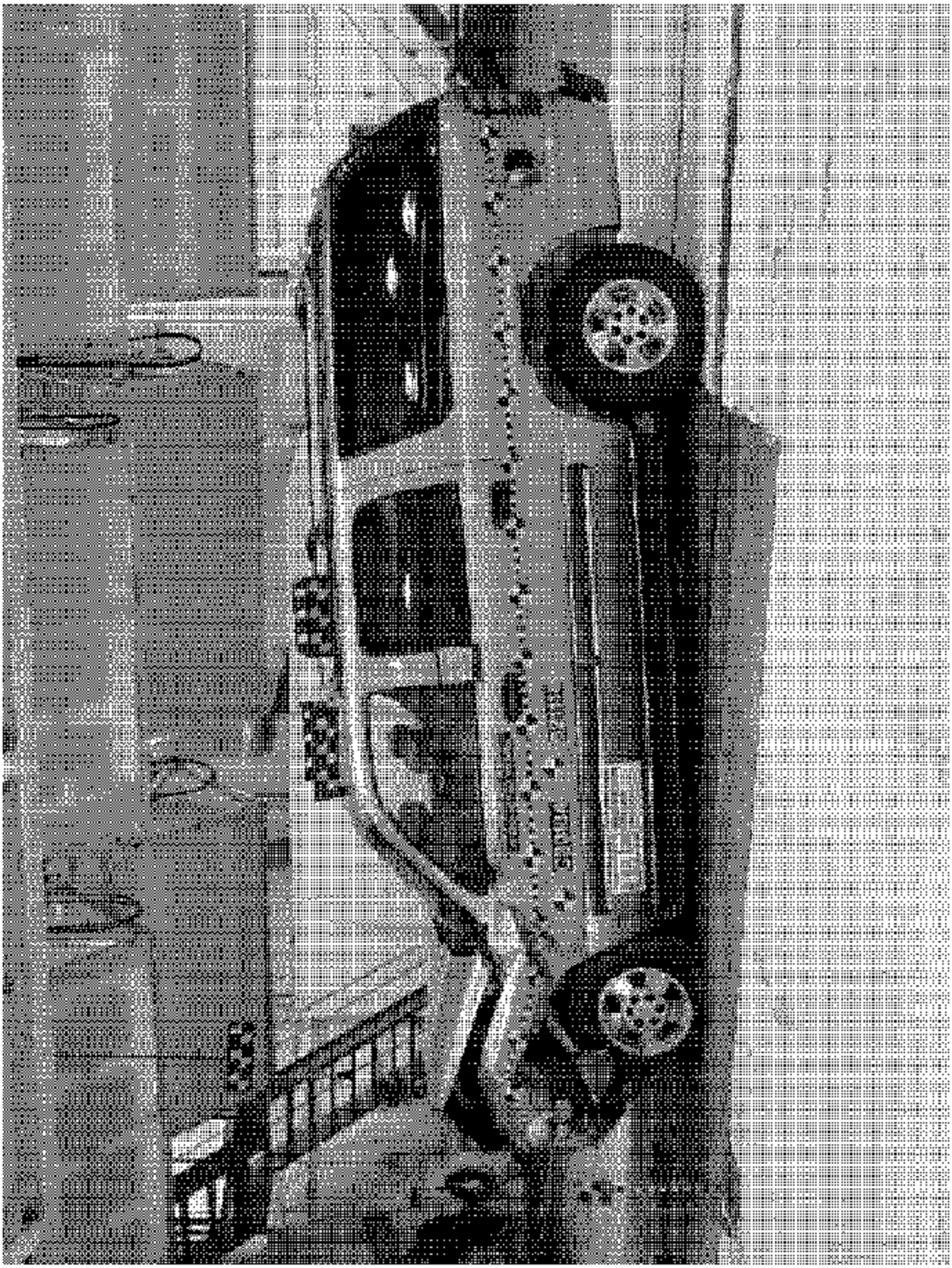

Image 4 Post-Test Left Side View

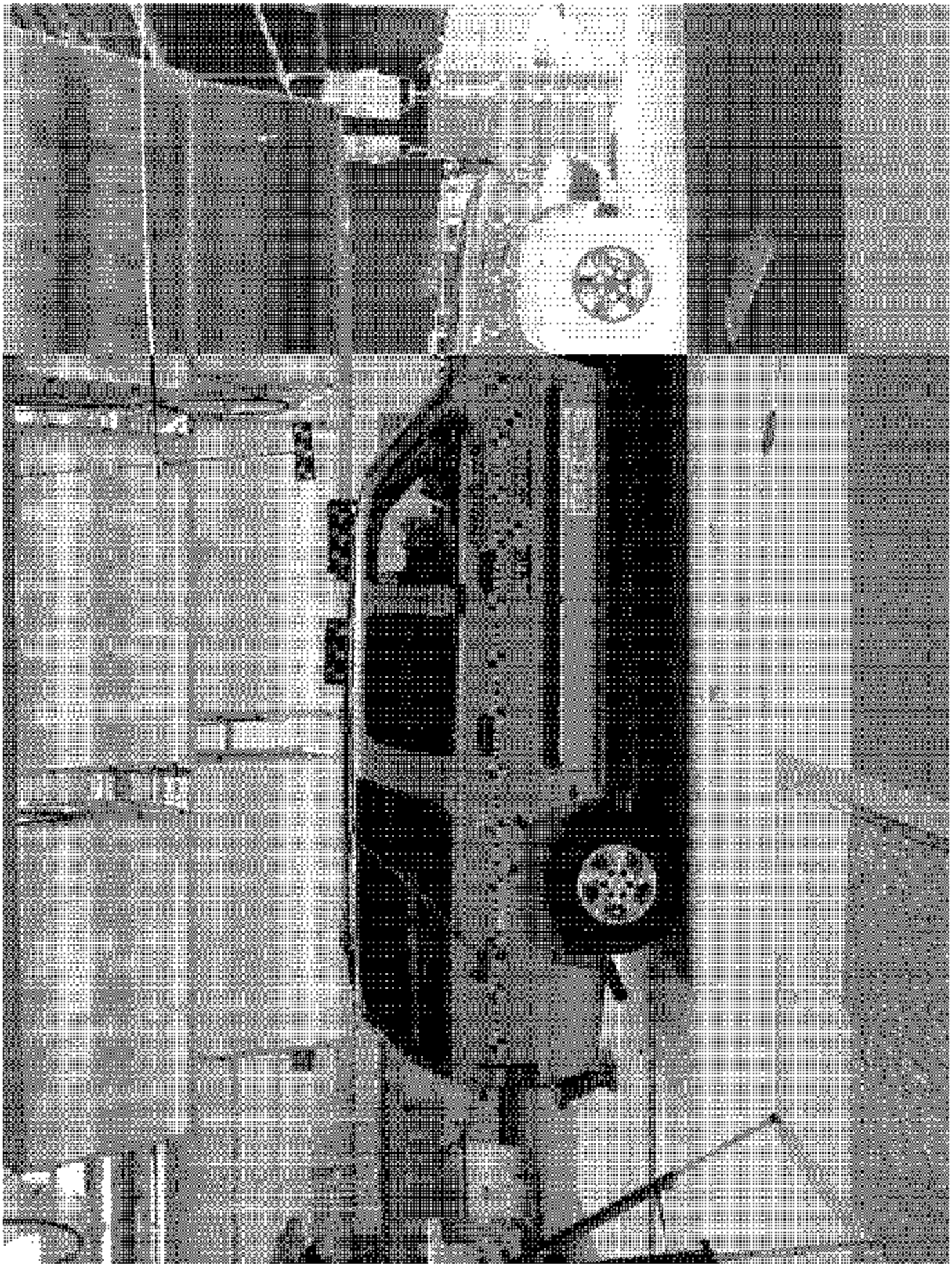

Image 5 Pre-Test Right Side View

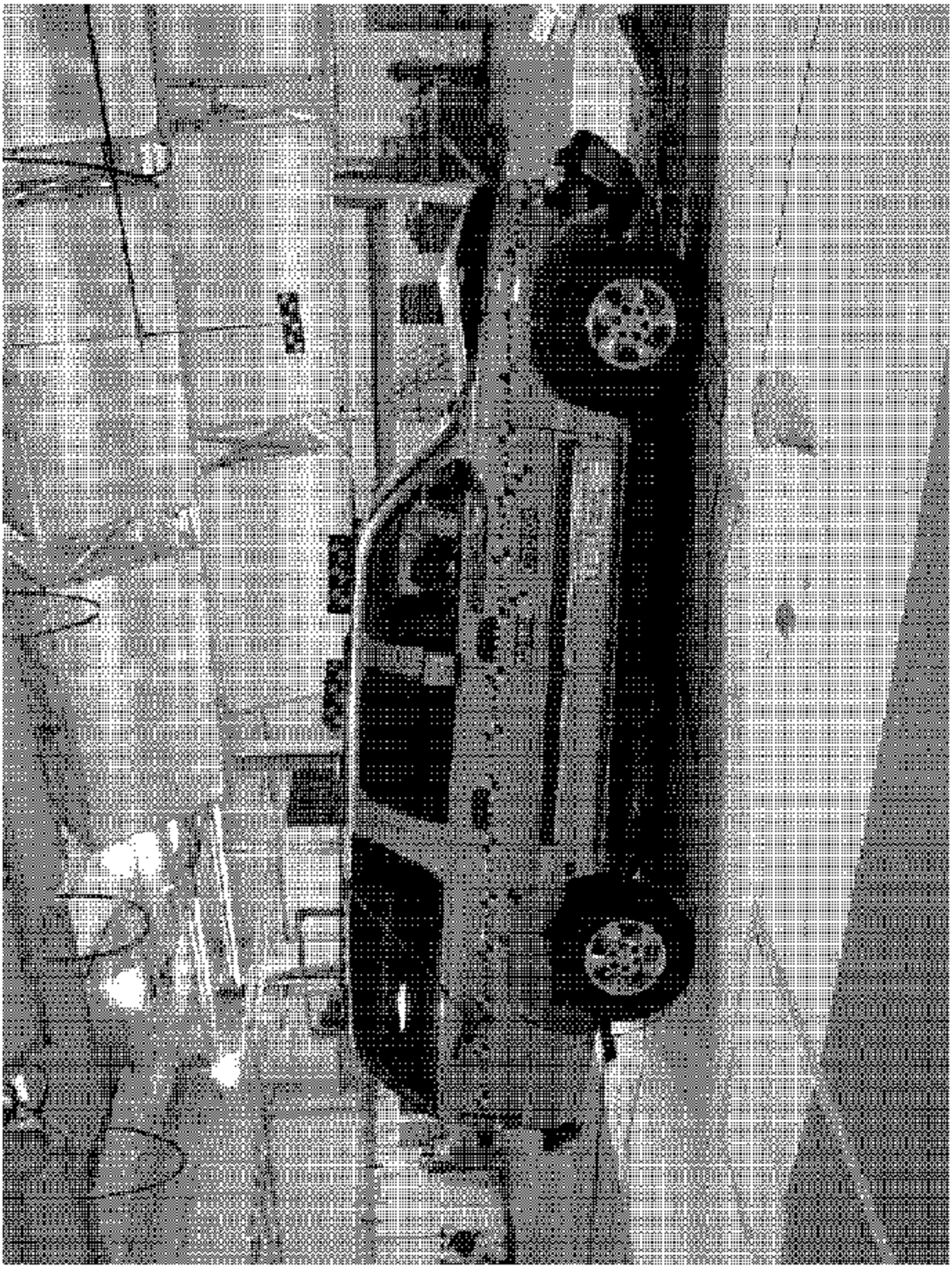

Image 6 Post-Test Right Side View

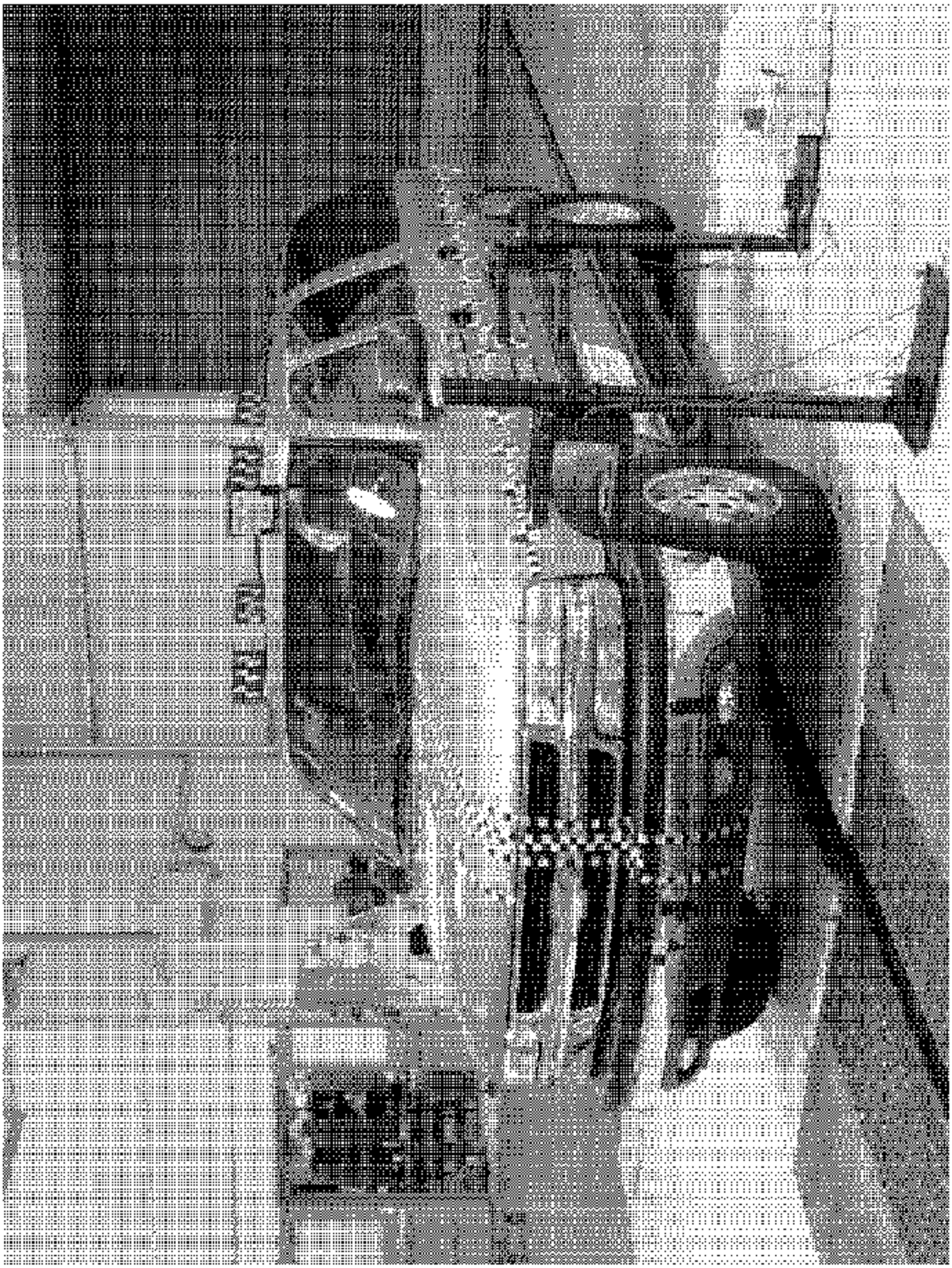

Image 7 Pre-Test Left Front Three-Quarter View

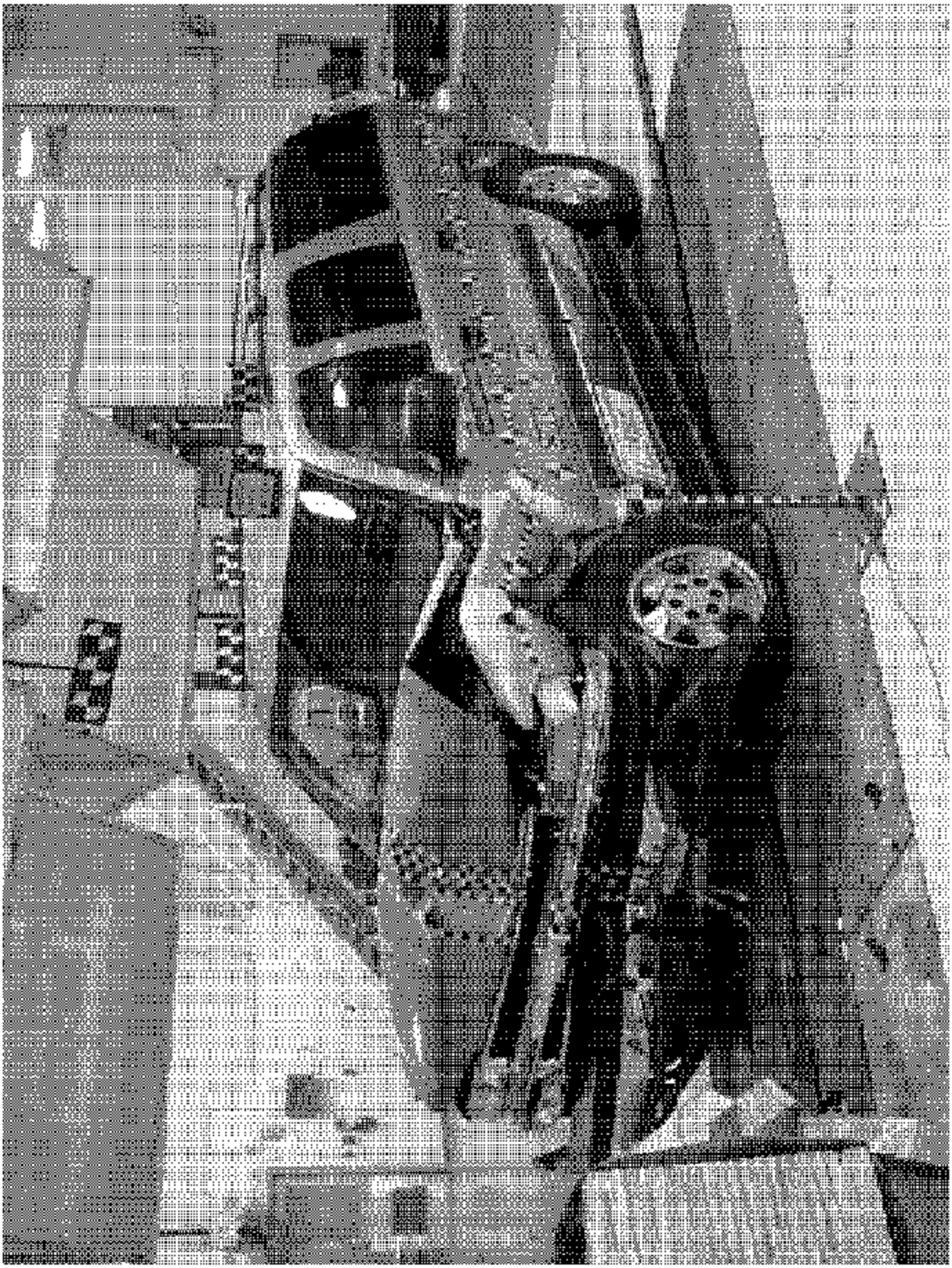

Image 8 Post-Test Left Front Three-Quarter View

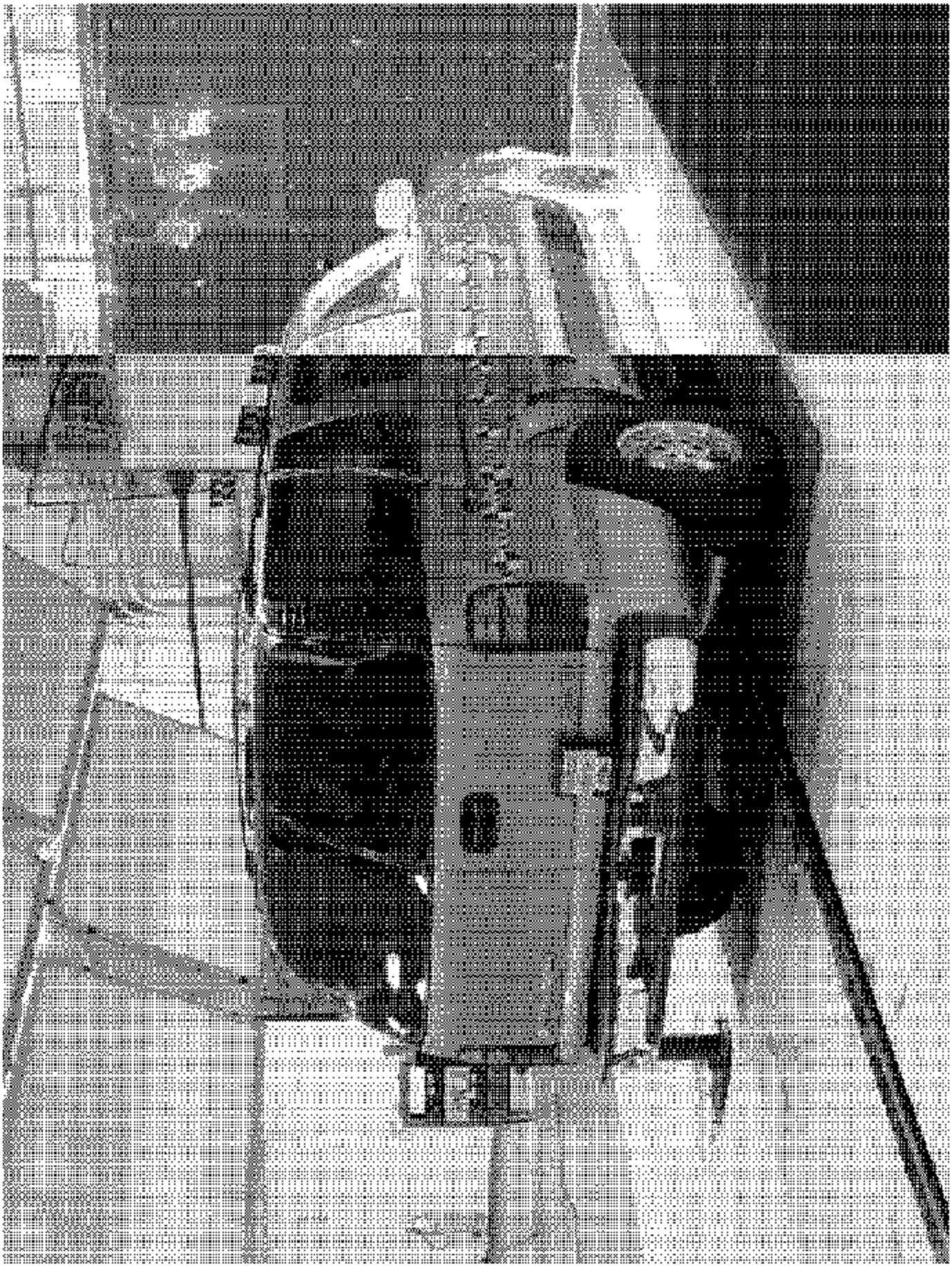

Image 9 Pre-Test Right Rear Three-Quarter View

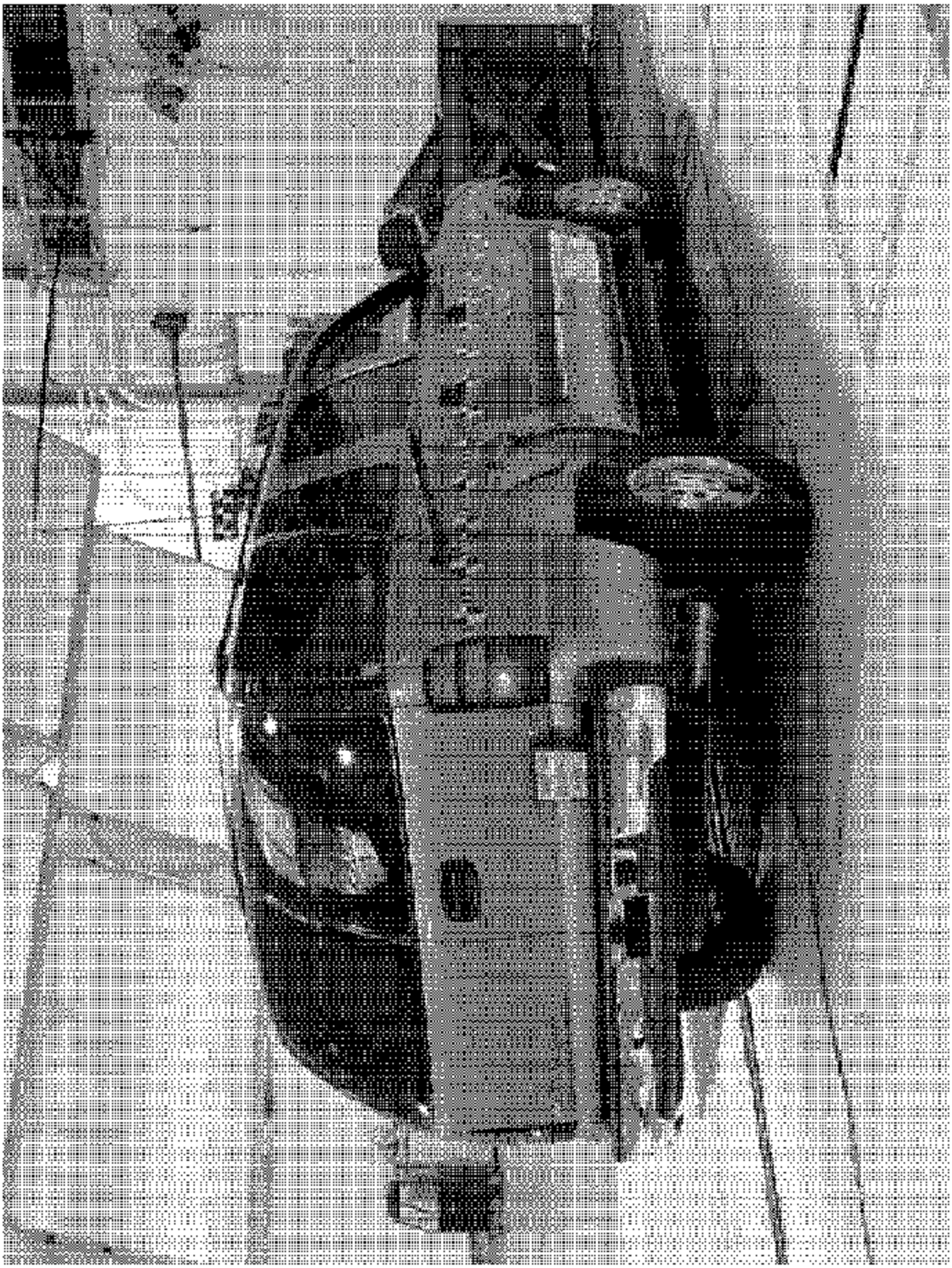

Image 10 Post-Test Right Rear Three-Quarter View

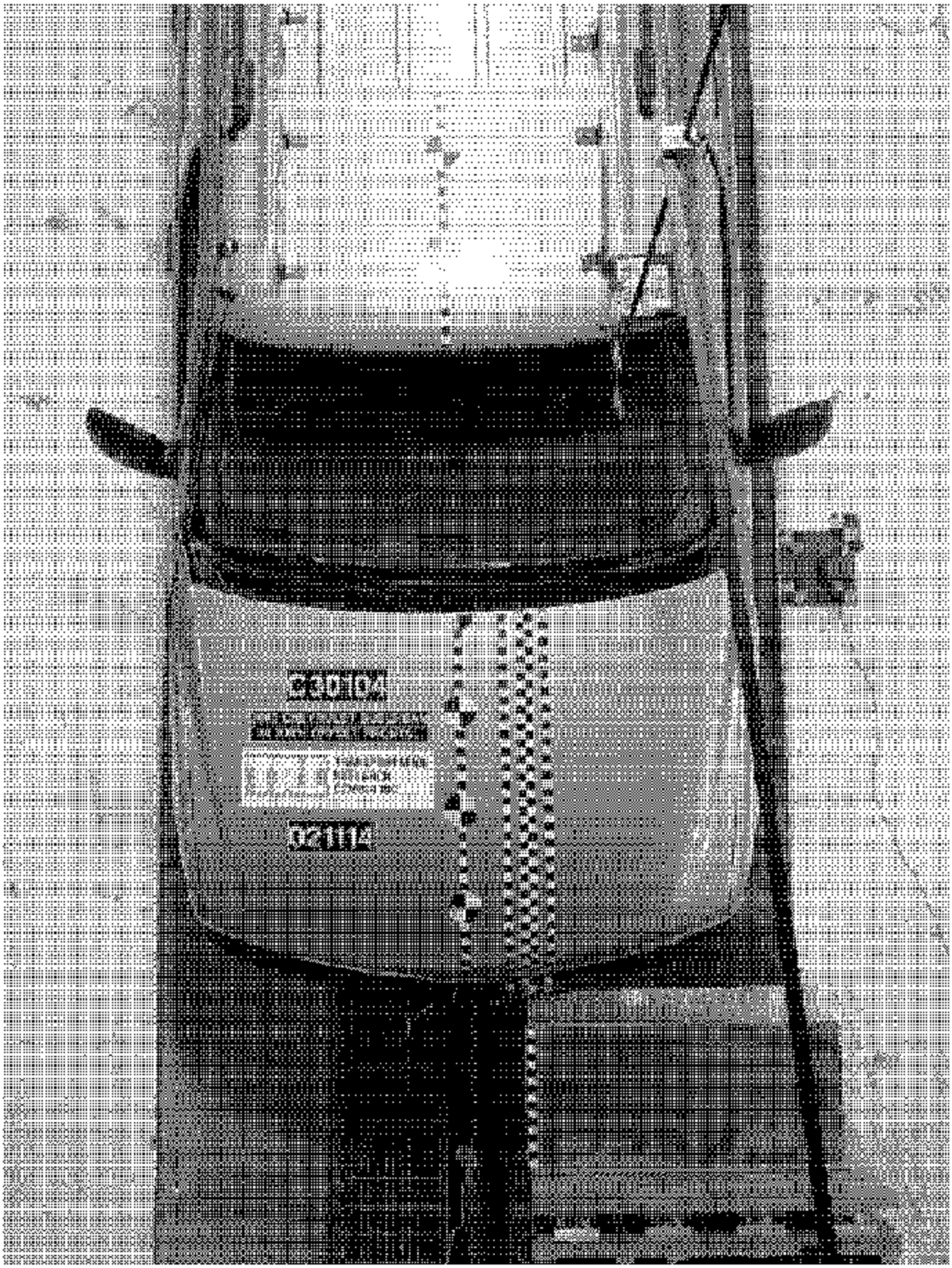

Image 11 Pre-Test Overhead View

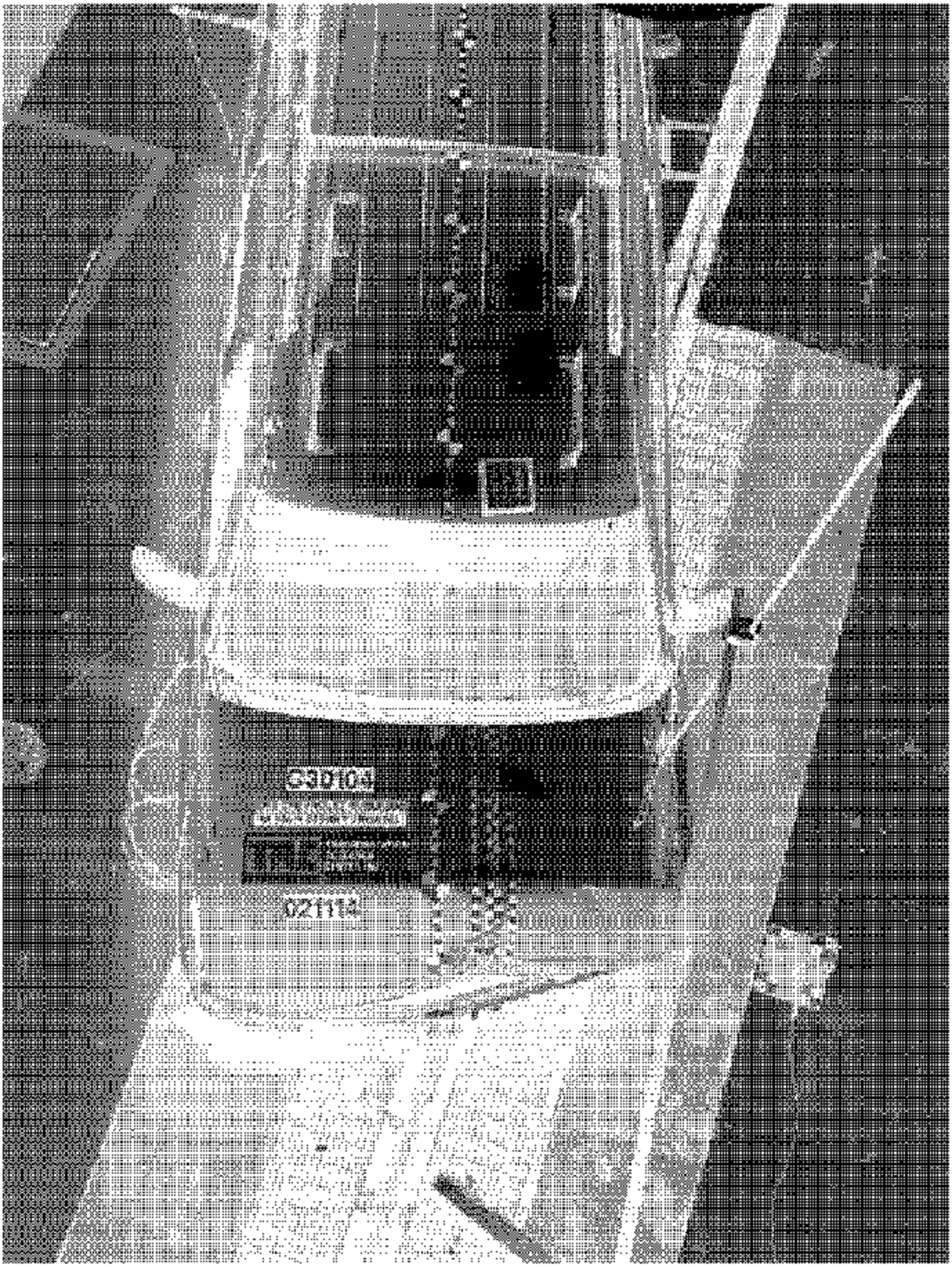

Image 12 Post-Test Overhead View

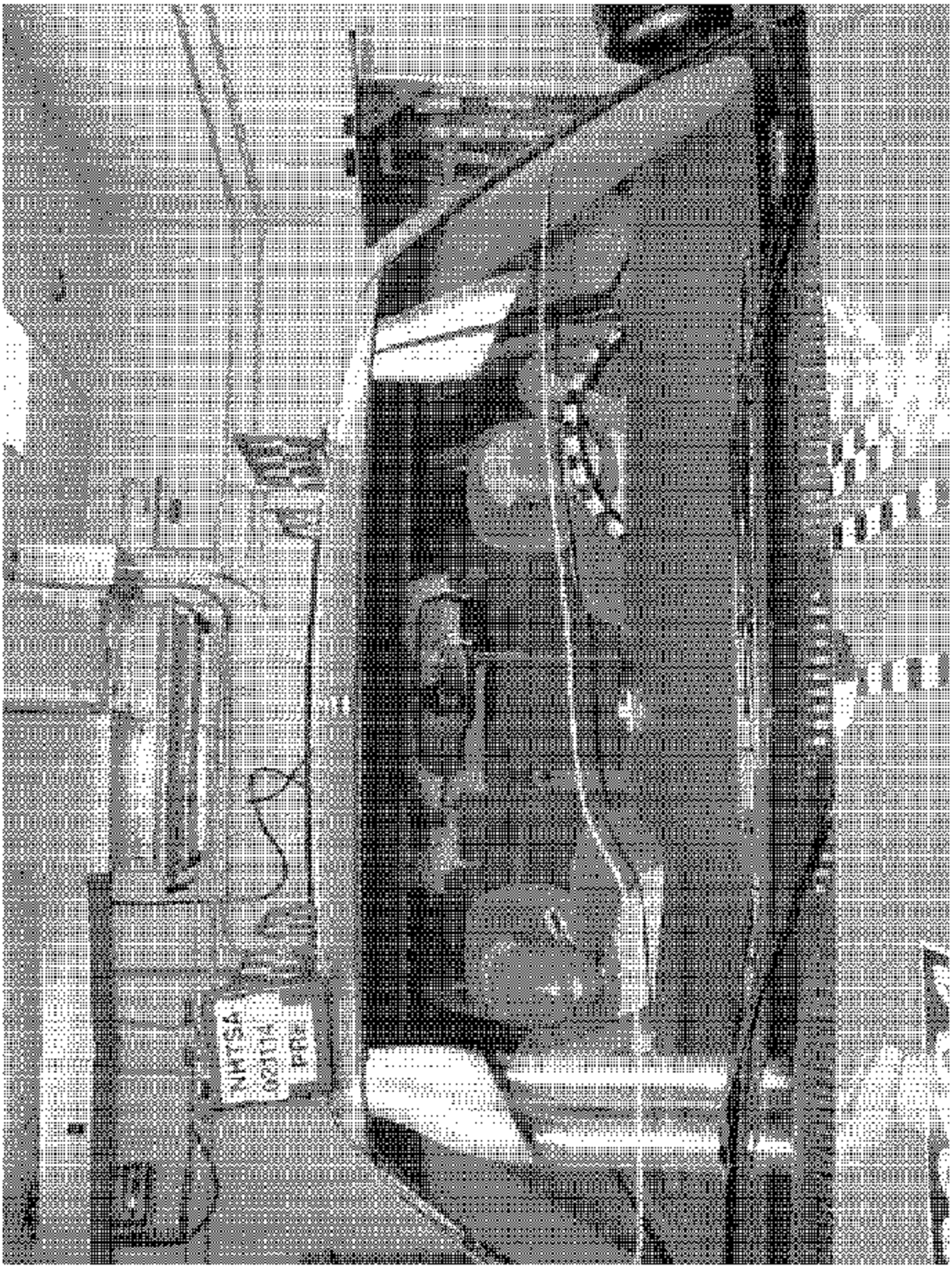

Image 13 Pre-Test Windshield View

Image 14 Post-Test Windshield View

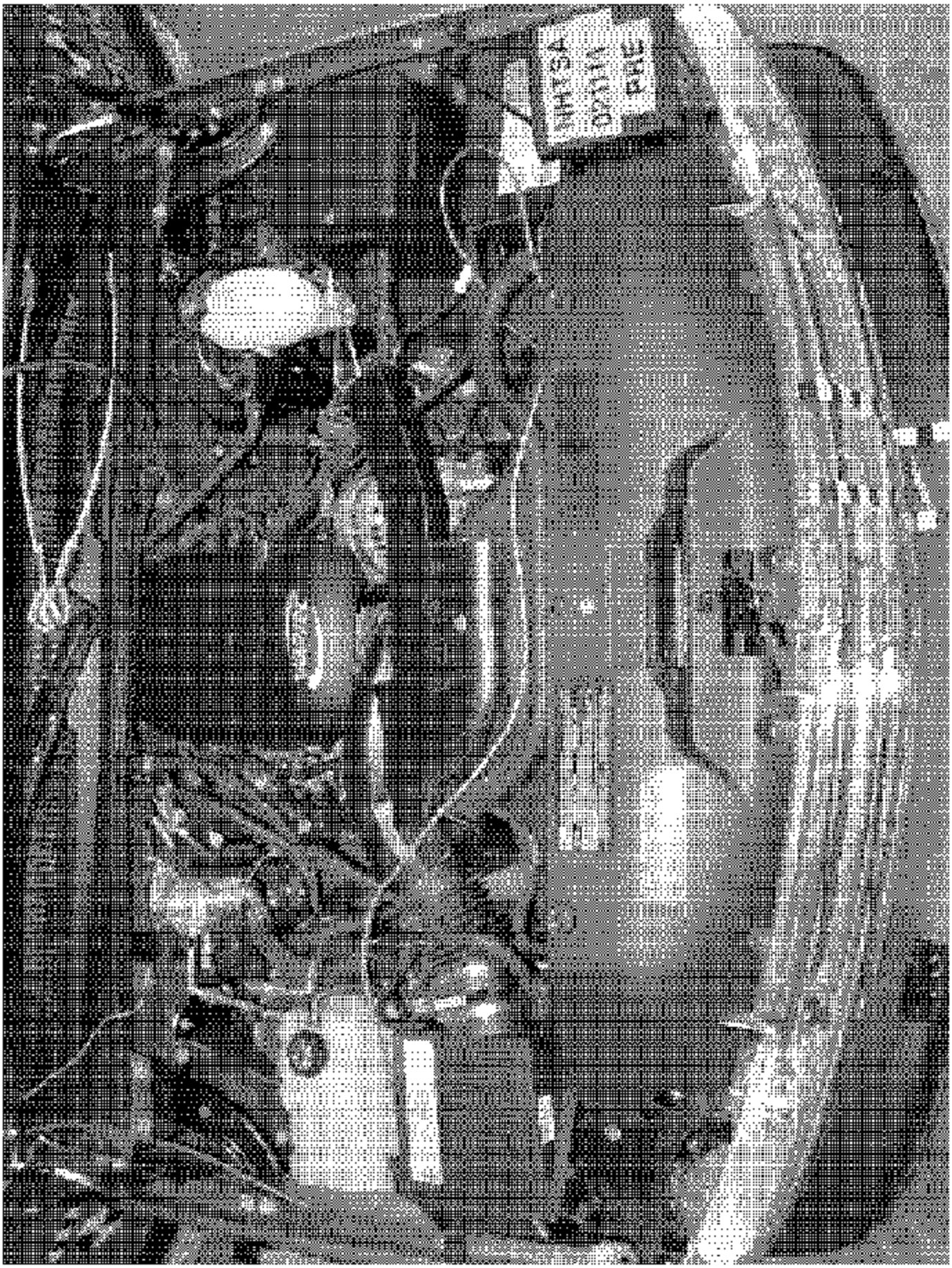

Image 15 Pre-Test Engine Compartment View

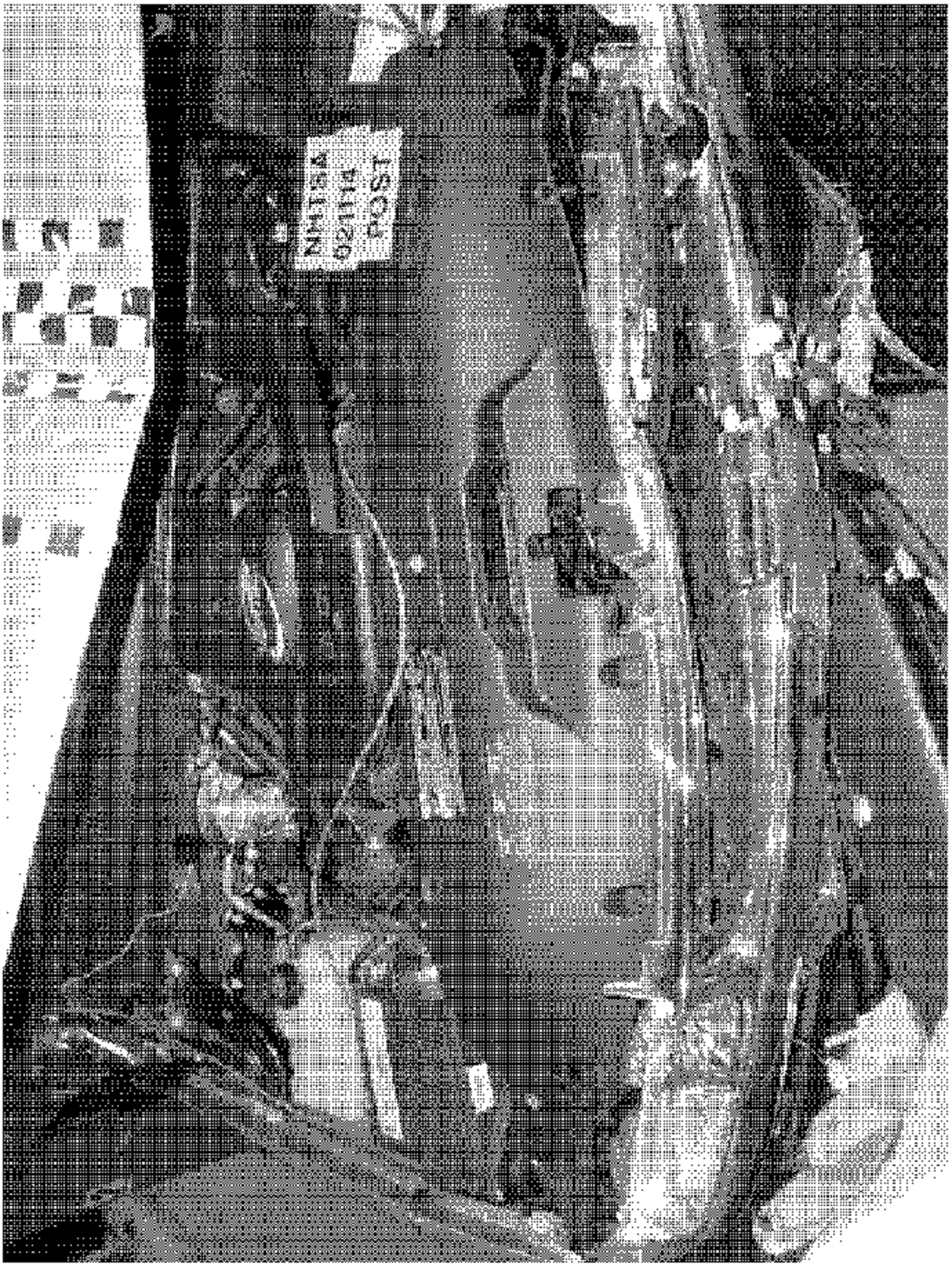

Image 16 Post-Test Engine Compartment View

Image 17 Pre-Test Steering Column and Firewall - Under Hood View

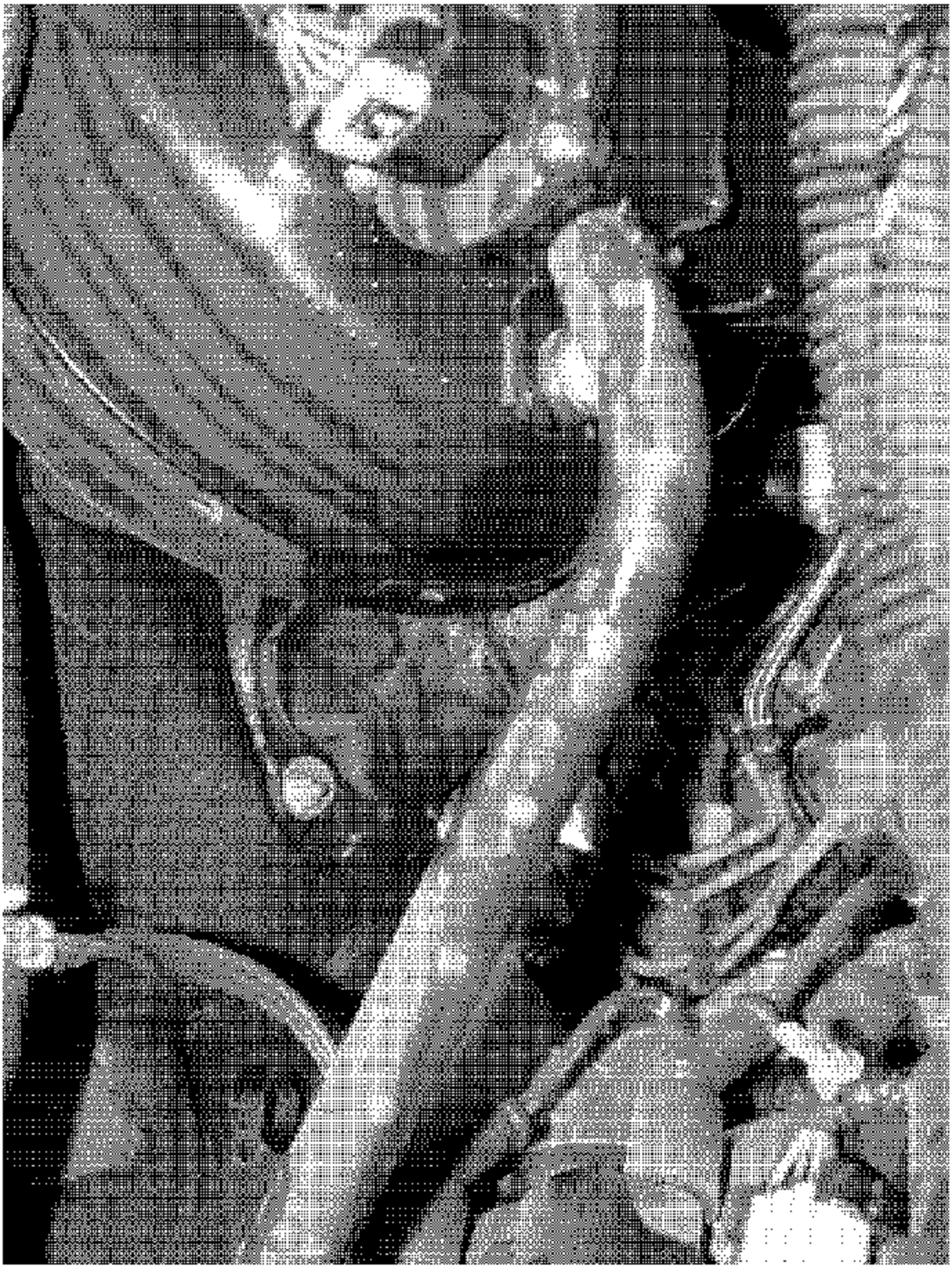

Image 18 Post-Test Steering Column and Firewall - Under Hood View

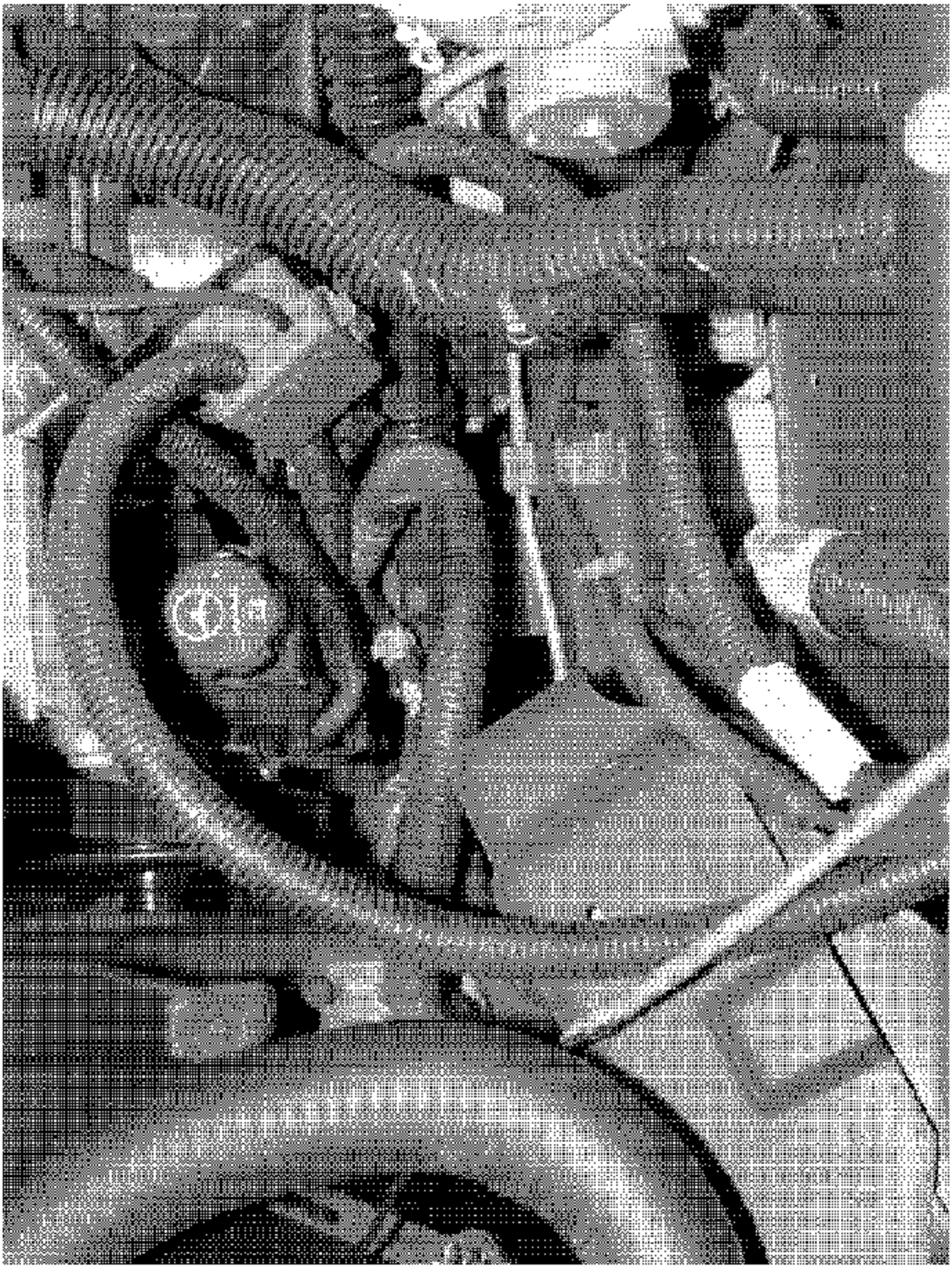

Image 19 Pre-Test Steering Box View

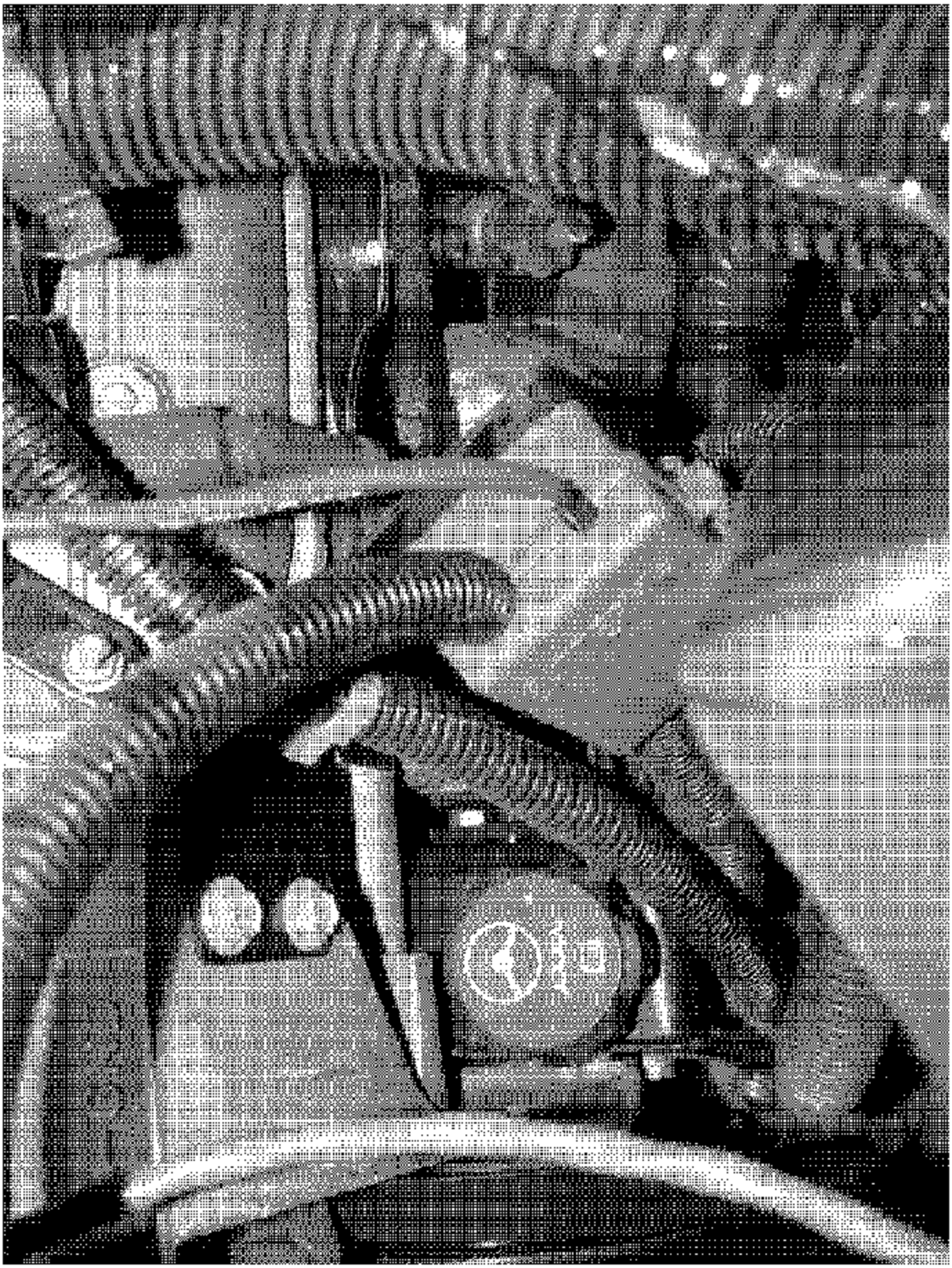

Image 20 Post-Test Steering Box View

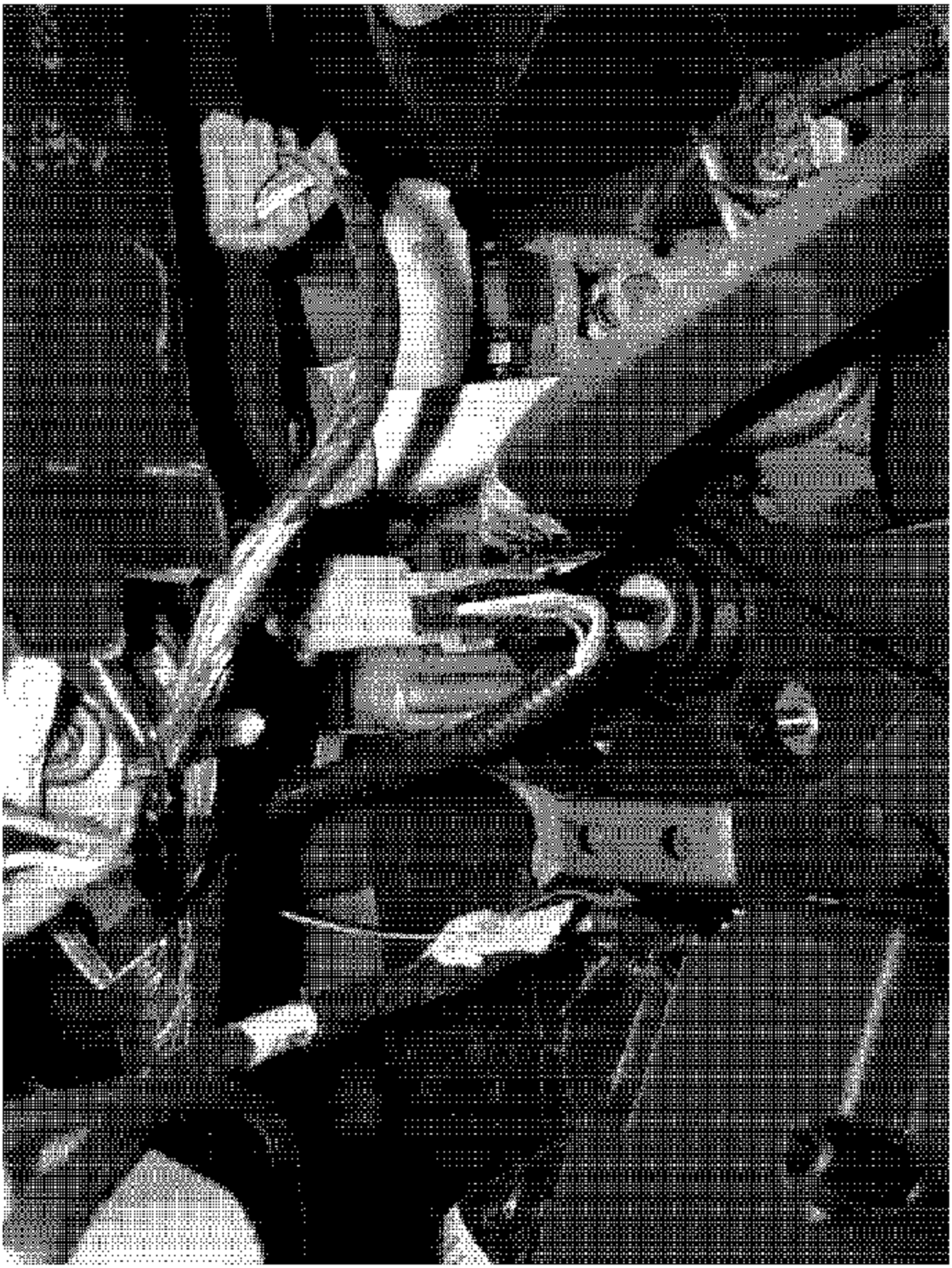

Image 21 Pre-Test Steering Column and Firewall - Interior View

Image 22 Post-Test Steering Column and Firewall - Interior View

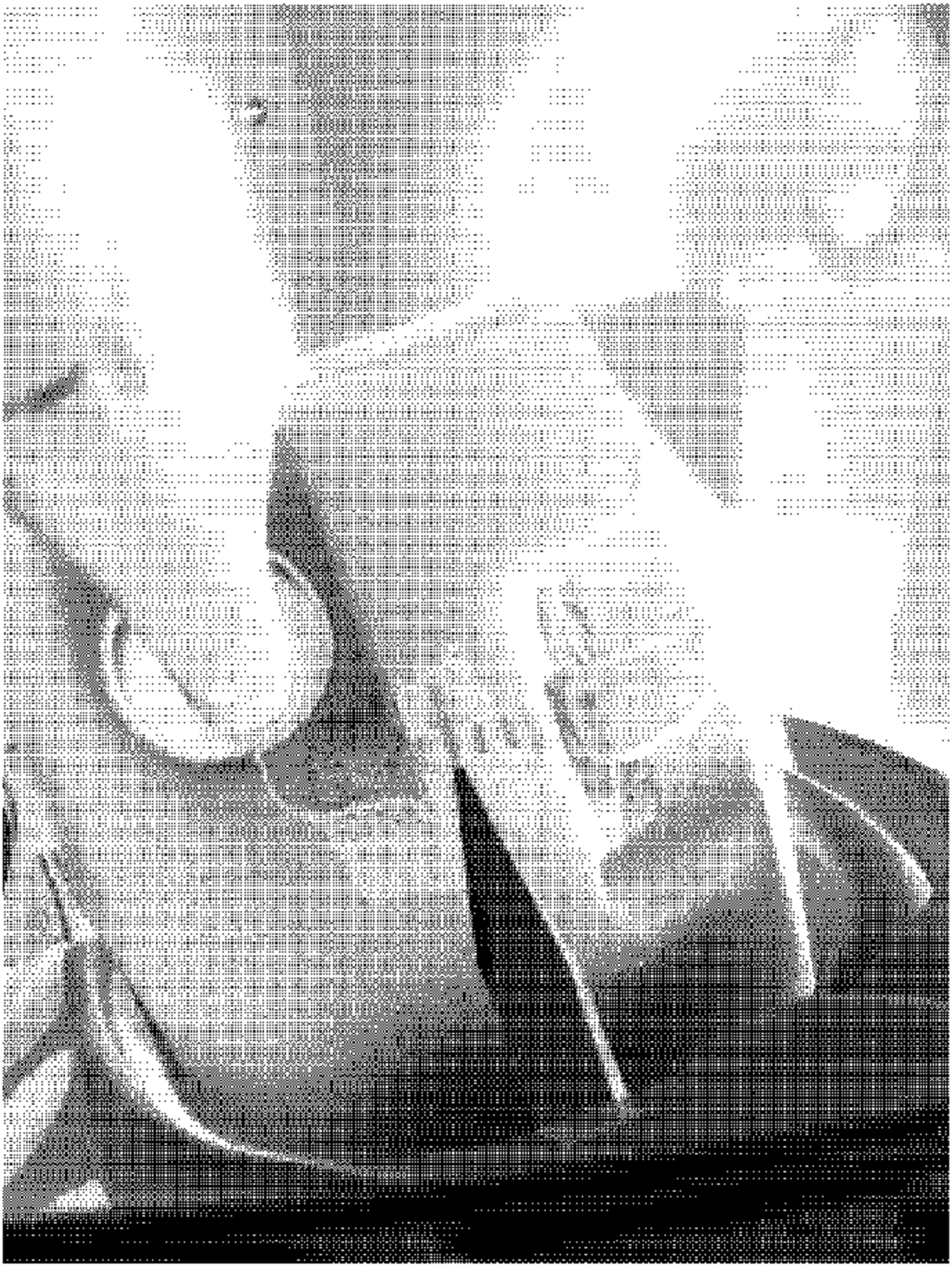

Image 23 Pre-Test Steering Column Position View

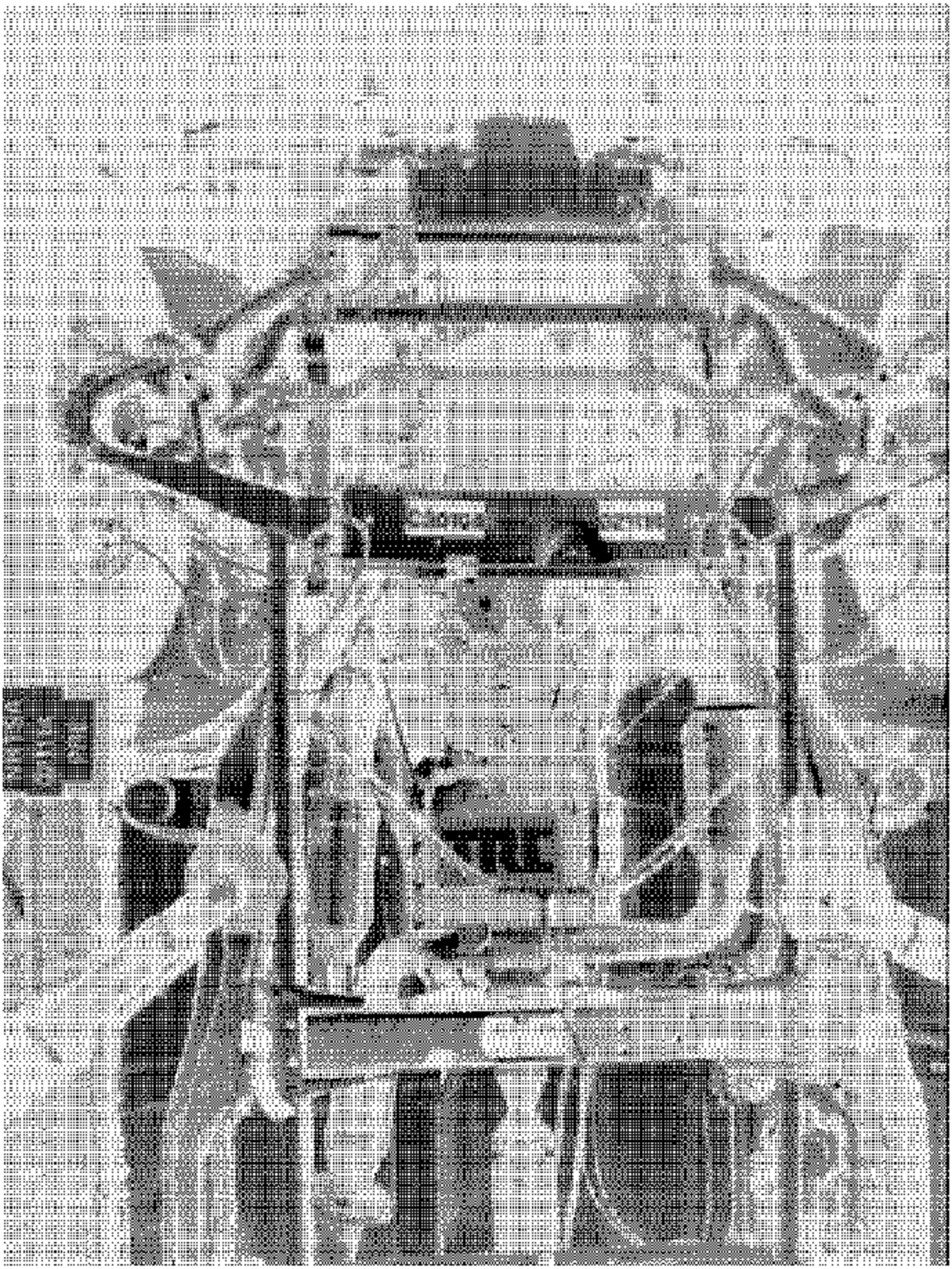

Image 24 Pre-Test Front Underbody View

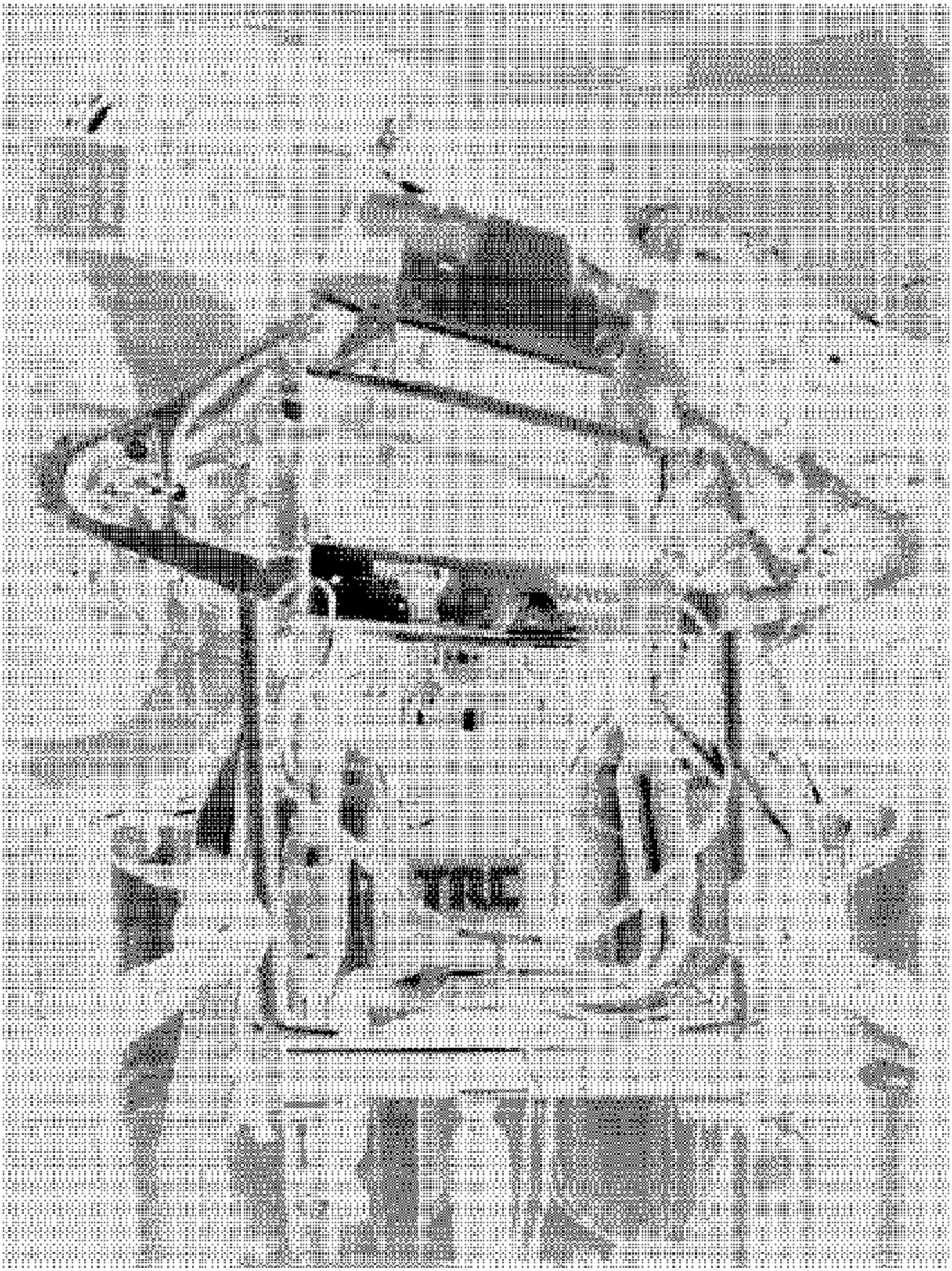

Image 25 Post-Test Front Underbody View

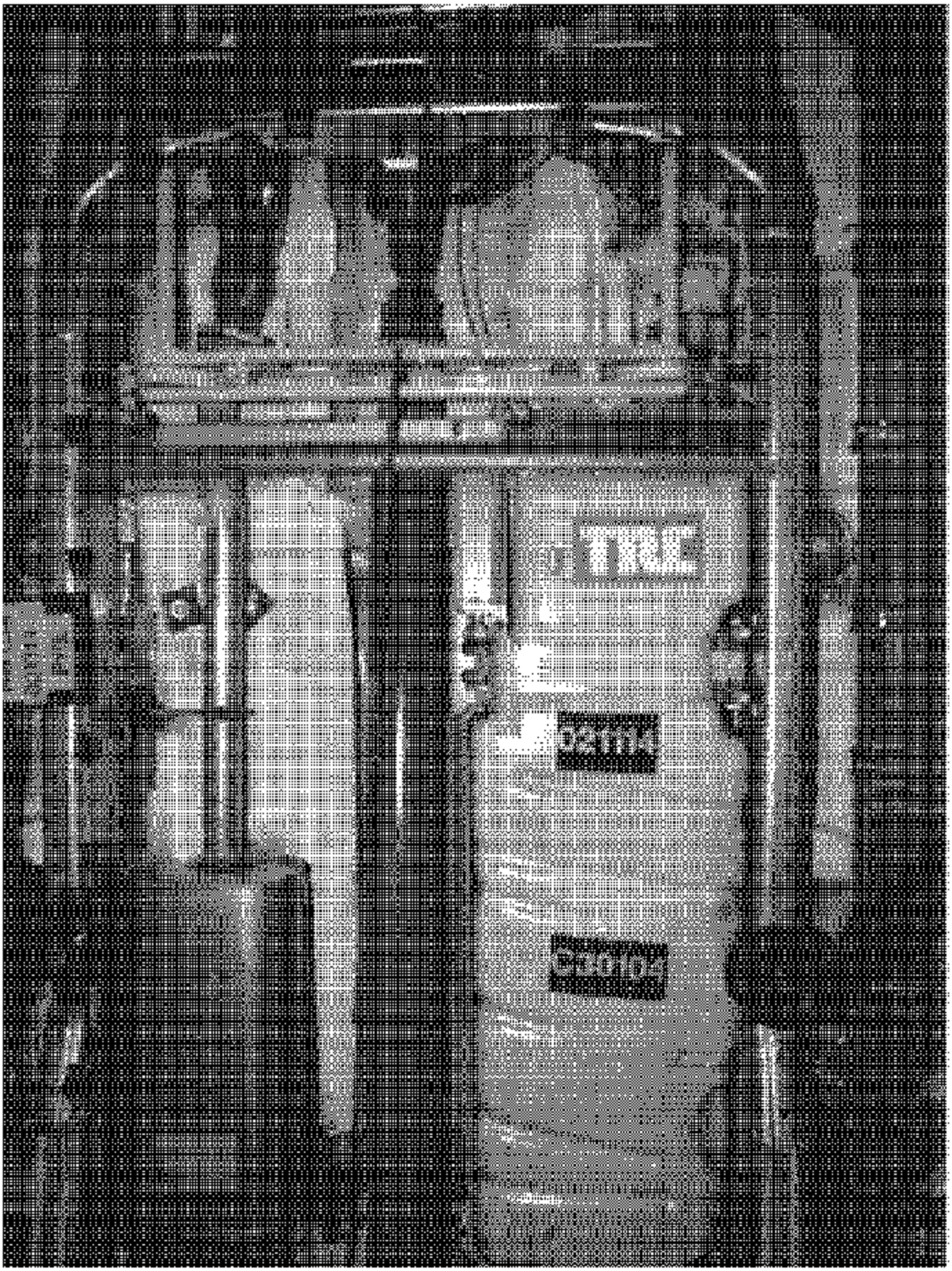

Image 26 Pre-Test Mid Underbody View

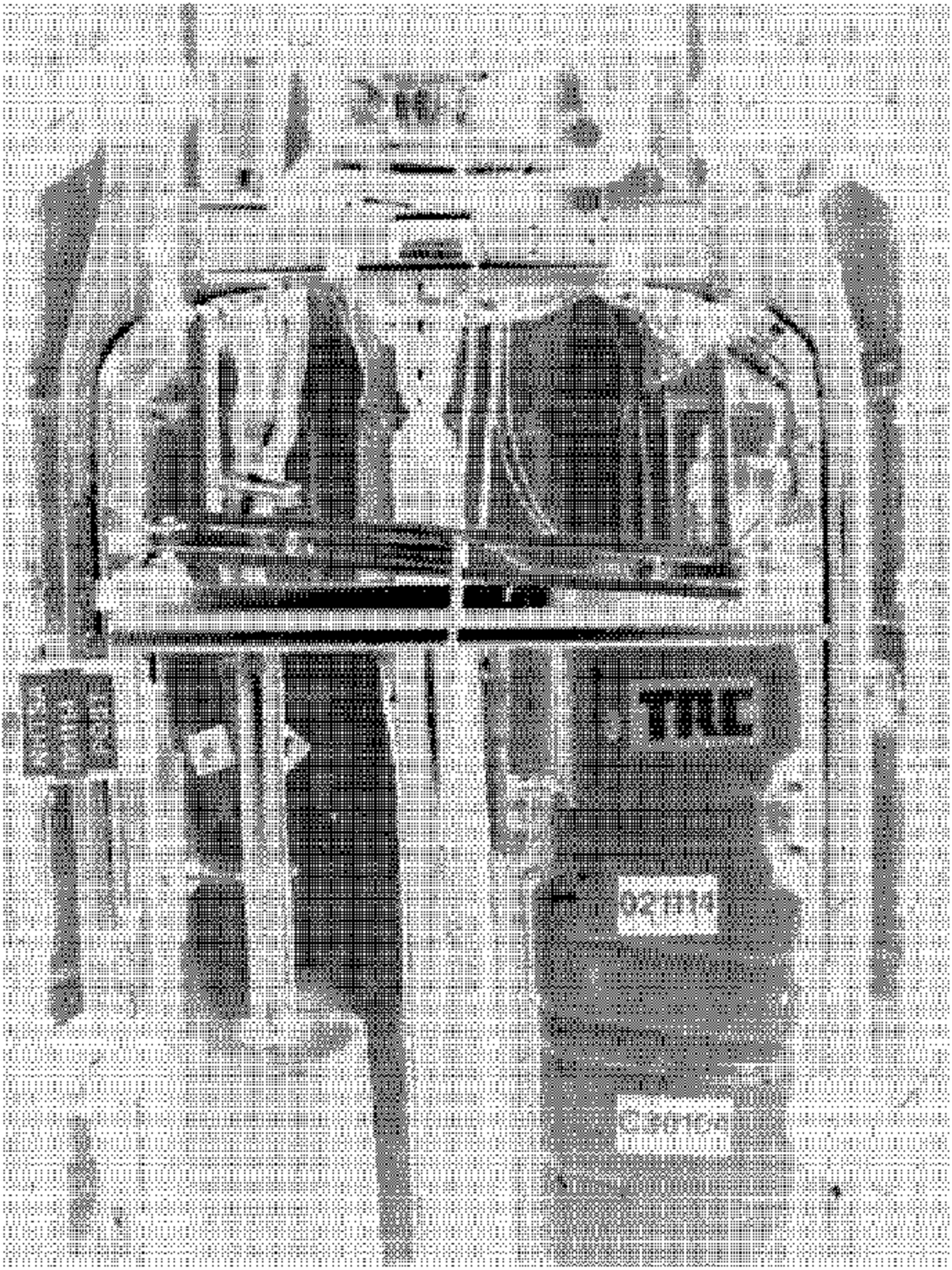

Image 27 Post-Test Mid Underbody View

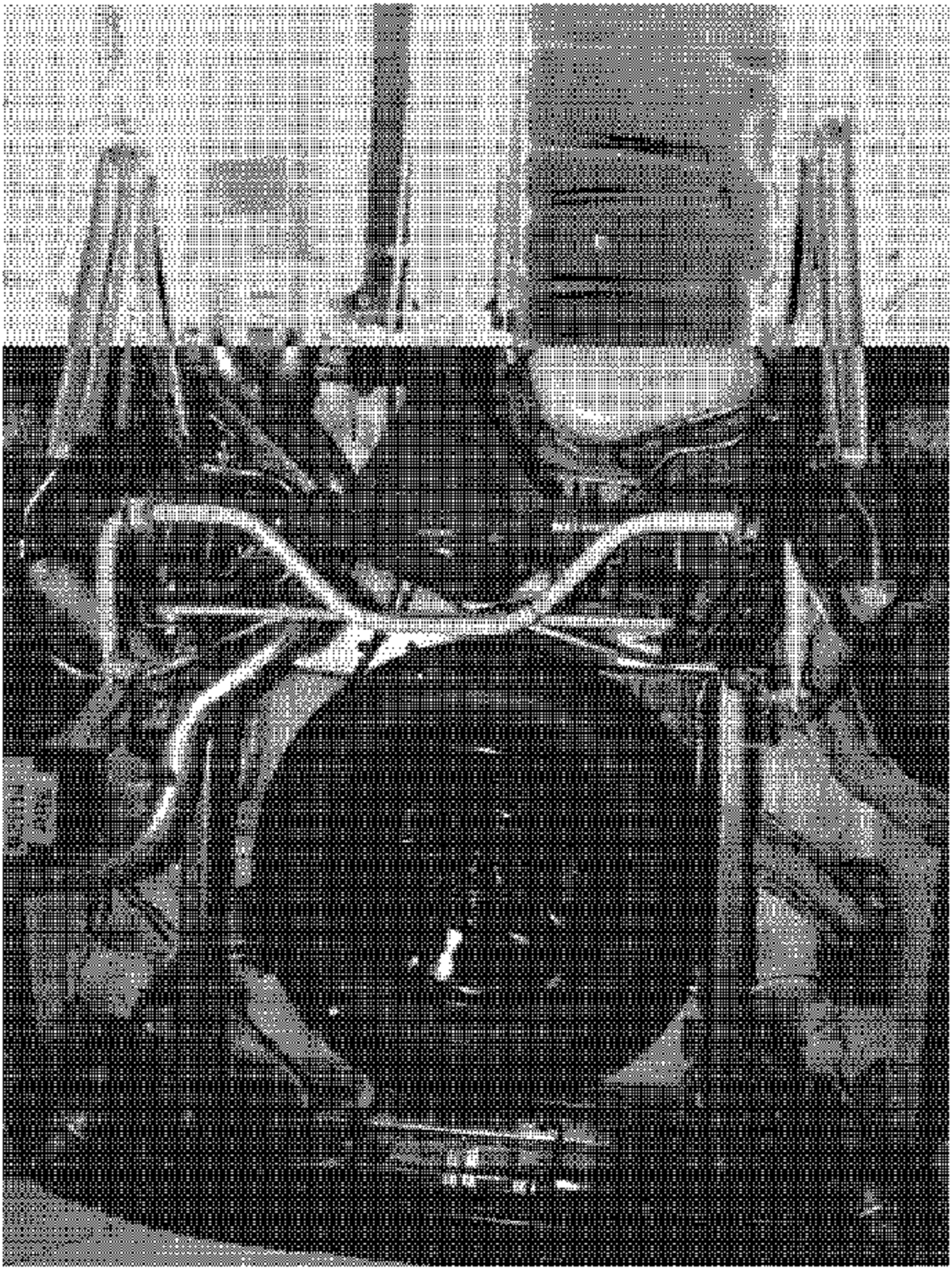

Image 28 Pre-Test Rear Underbody View

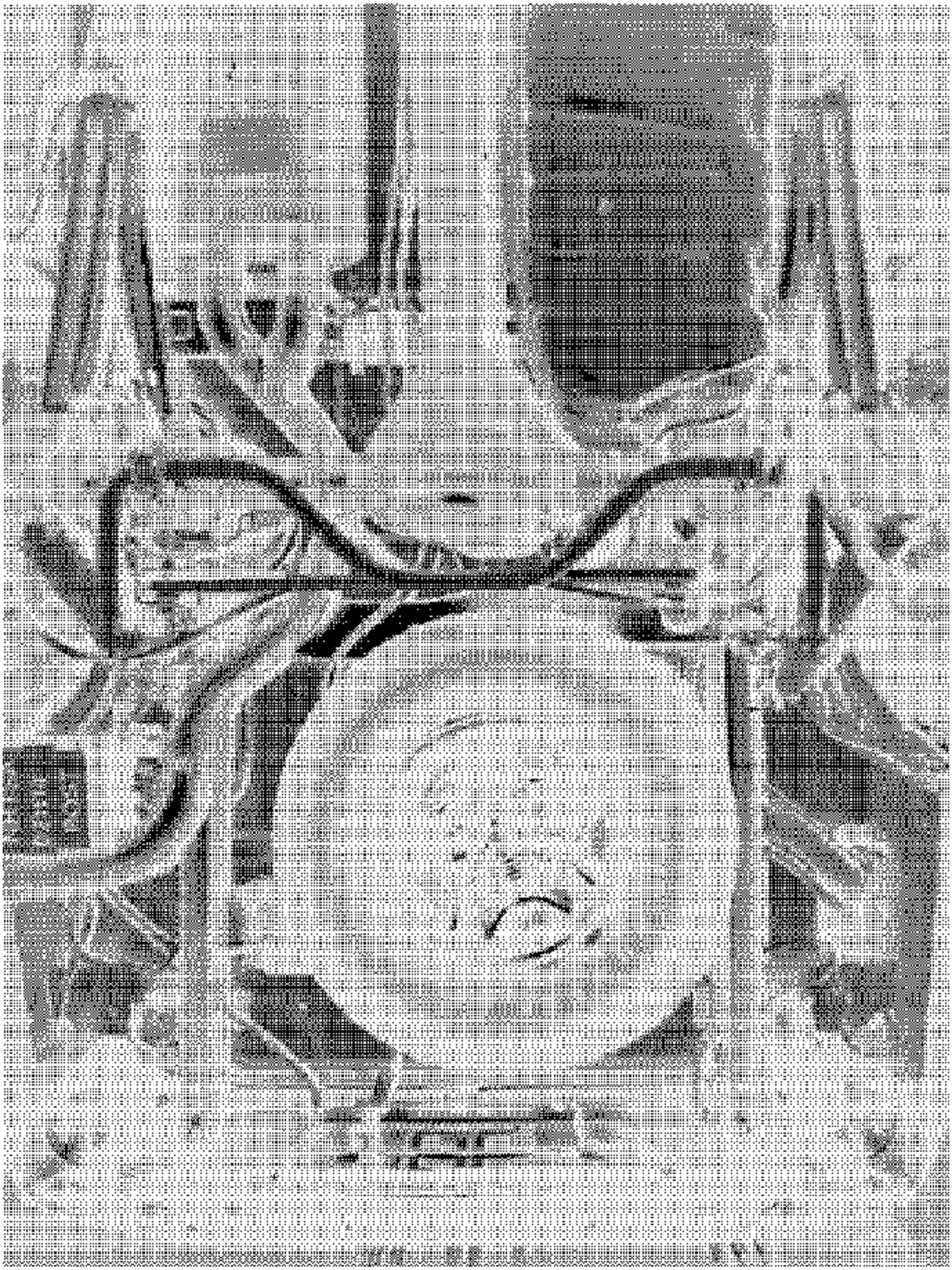

Image 29 Post-Test Rear Underbody View

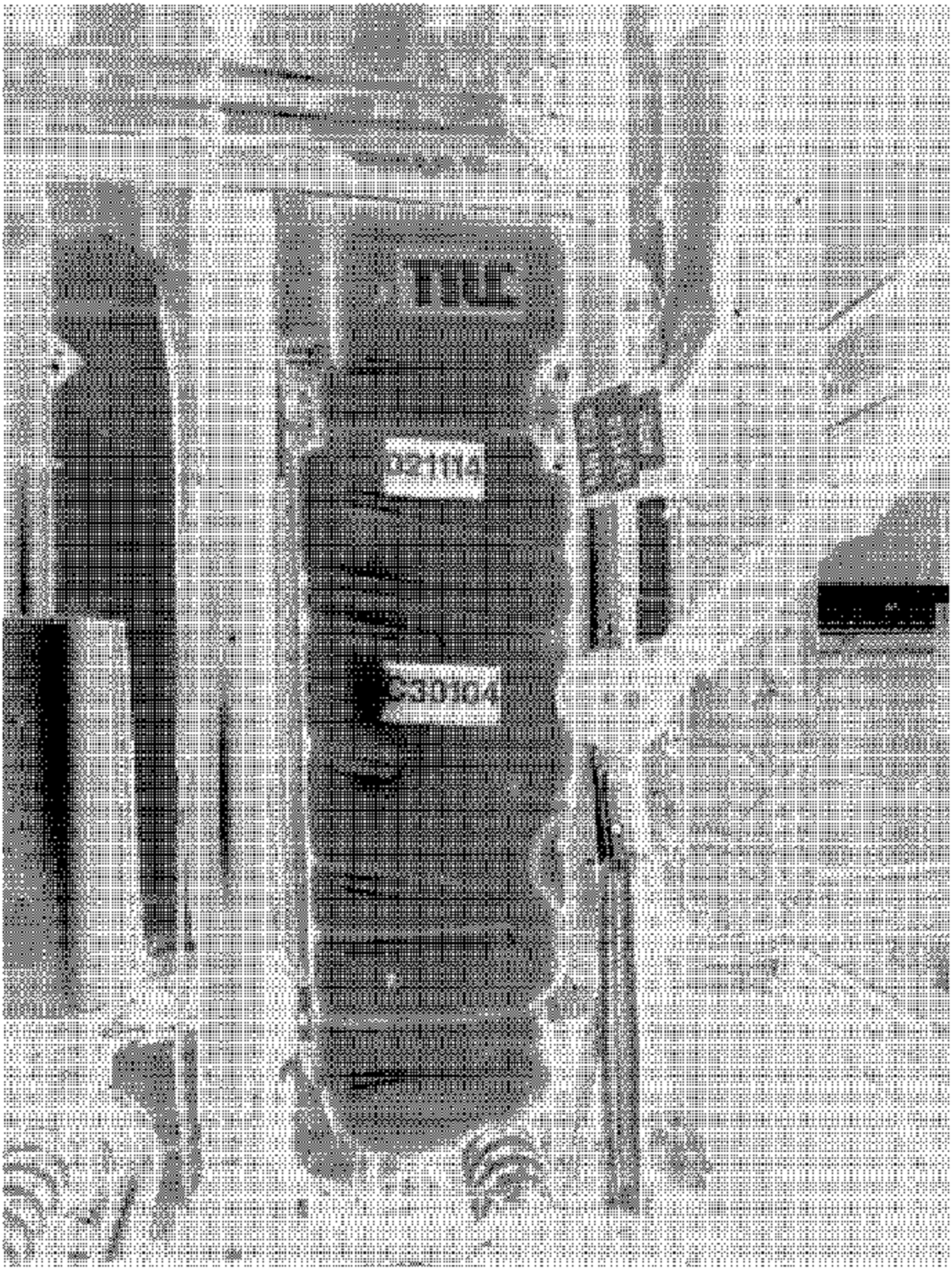

Image 30 Pre-Test Fuel Tank View

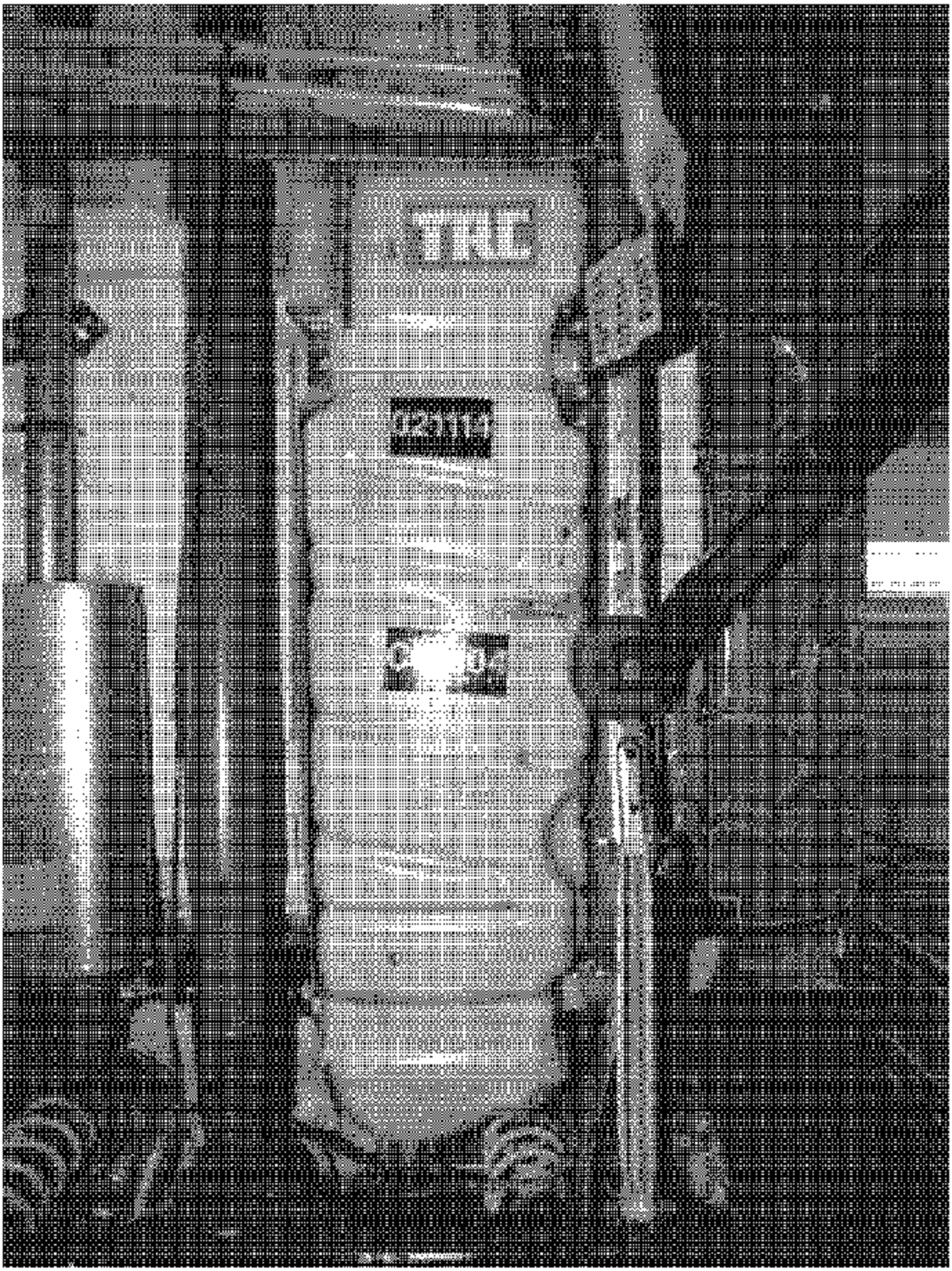

Image 31 Post-Test Fuel Tank View

Image 32 Pre-Test Fuel Lines View

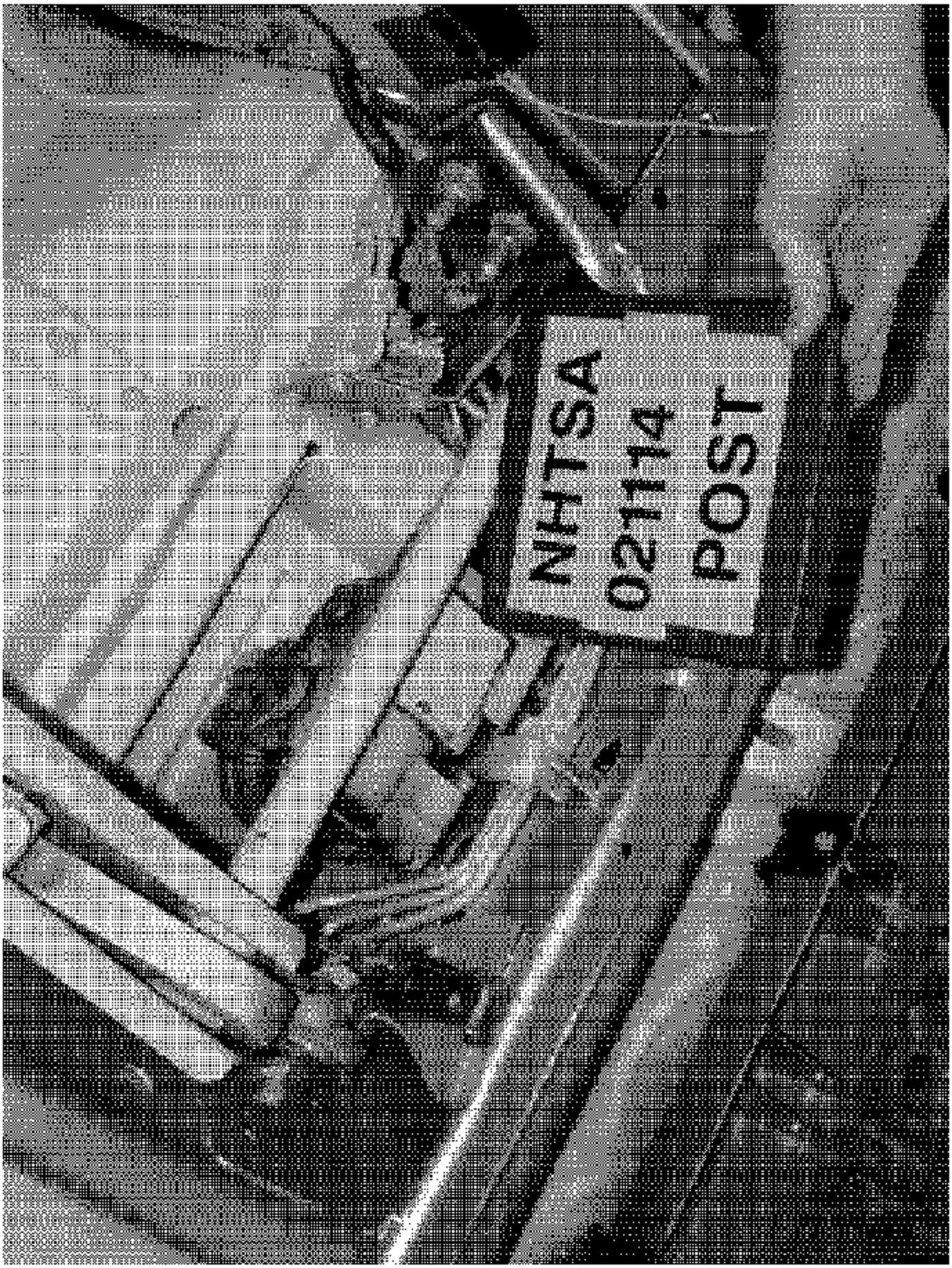

Image 33 Post-Test Fuel Lines View

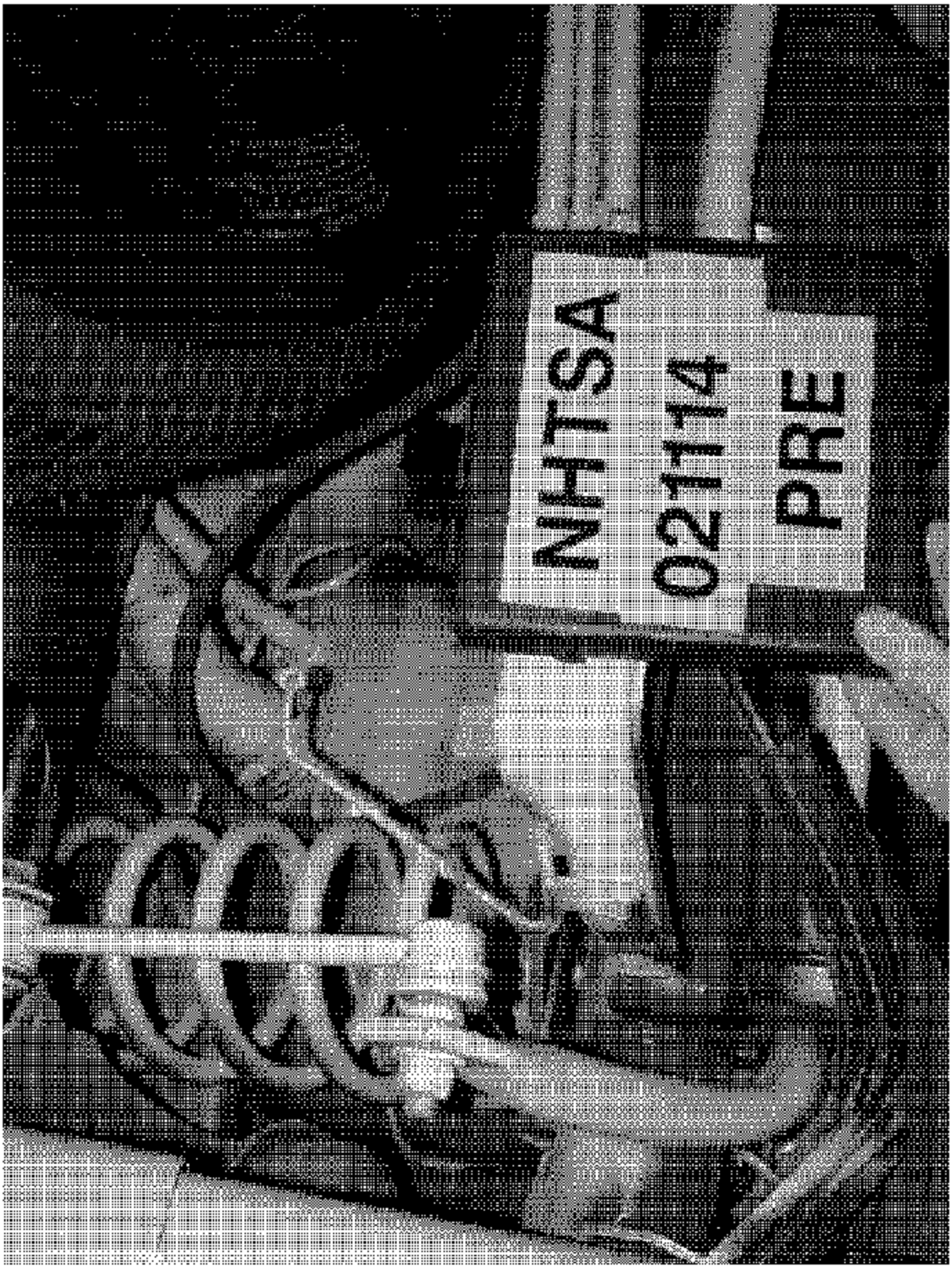

Image 34 Pre-Test Fuel Filler Neck - View 1

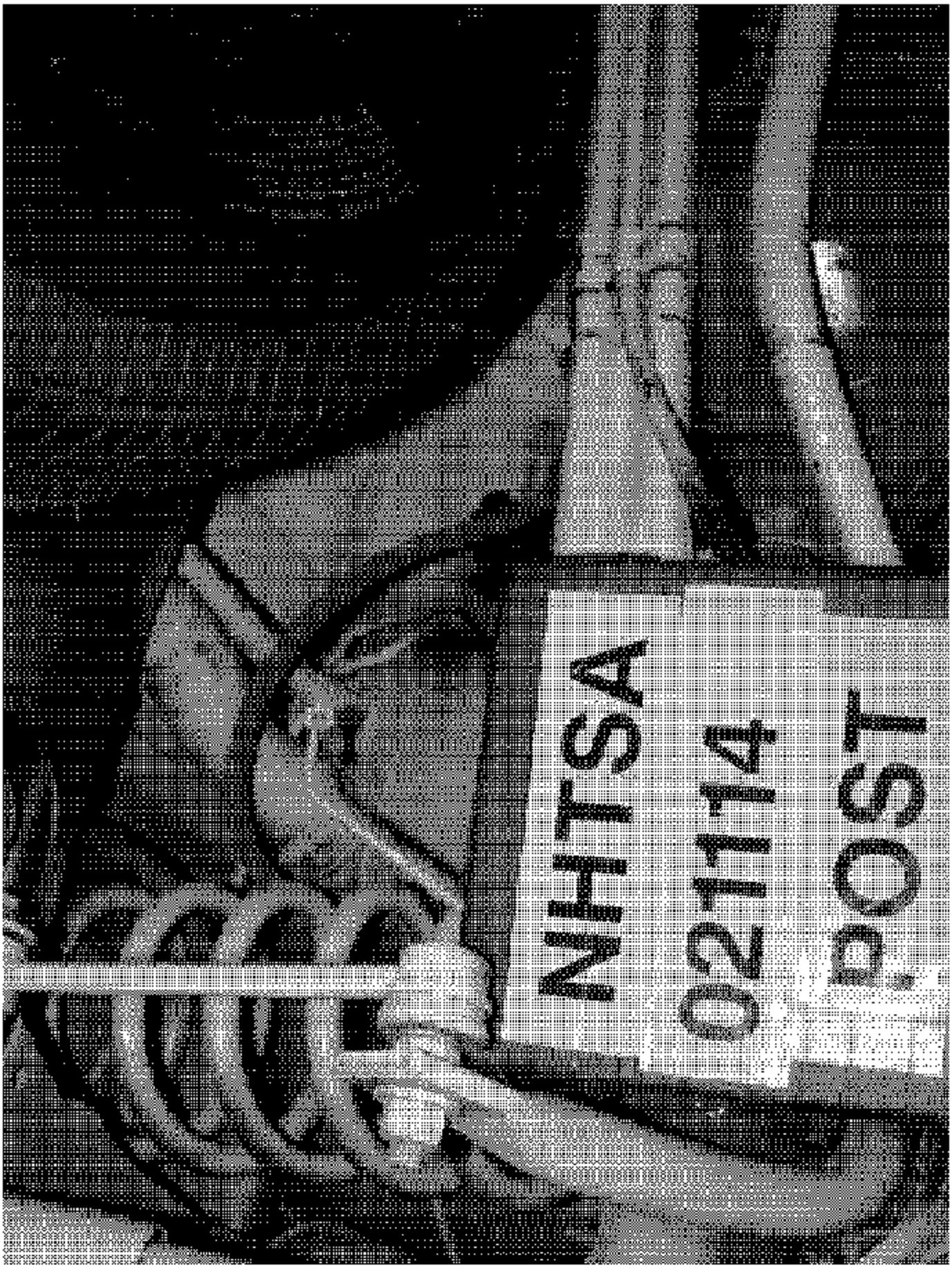

Image 35 Post-Test Fuel Filler Neck - View 1

Image 36 Pre-Test Fuel Filler Neck - View 2

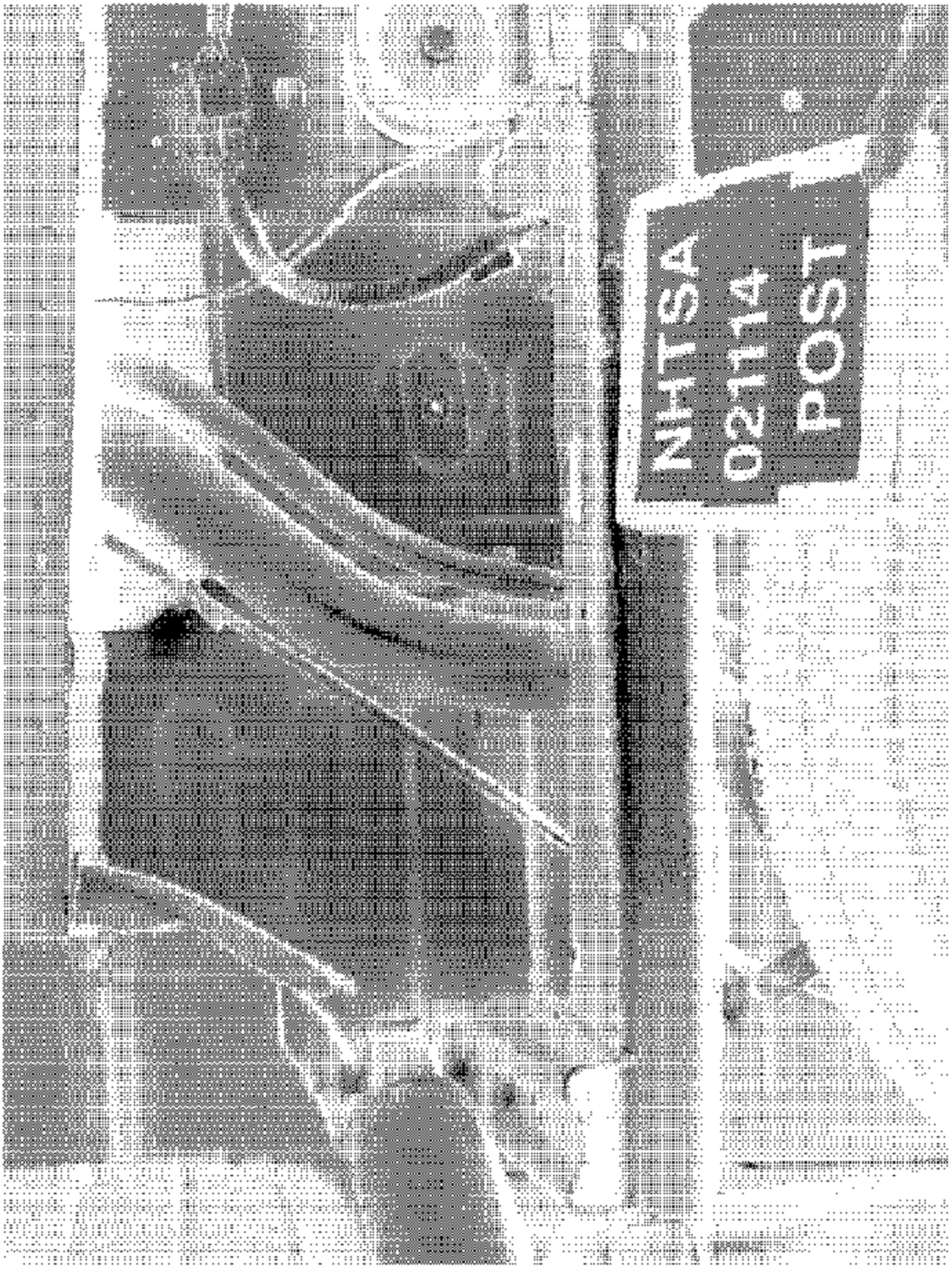

Image 37 Post-Test Fuel Filler Neck - View 2

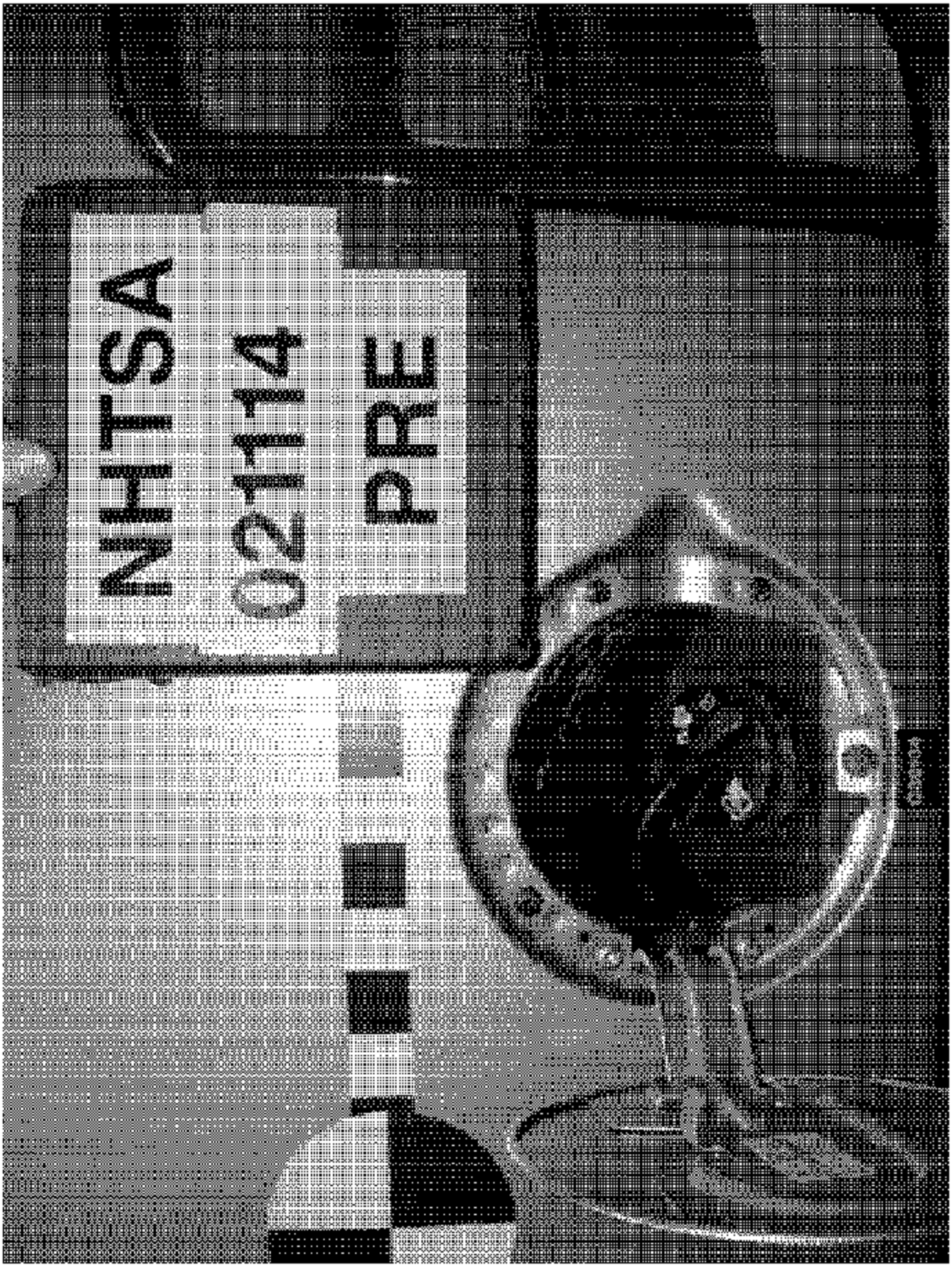

Image 38 Pre-Test Fuel Filler Cap View

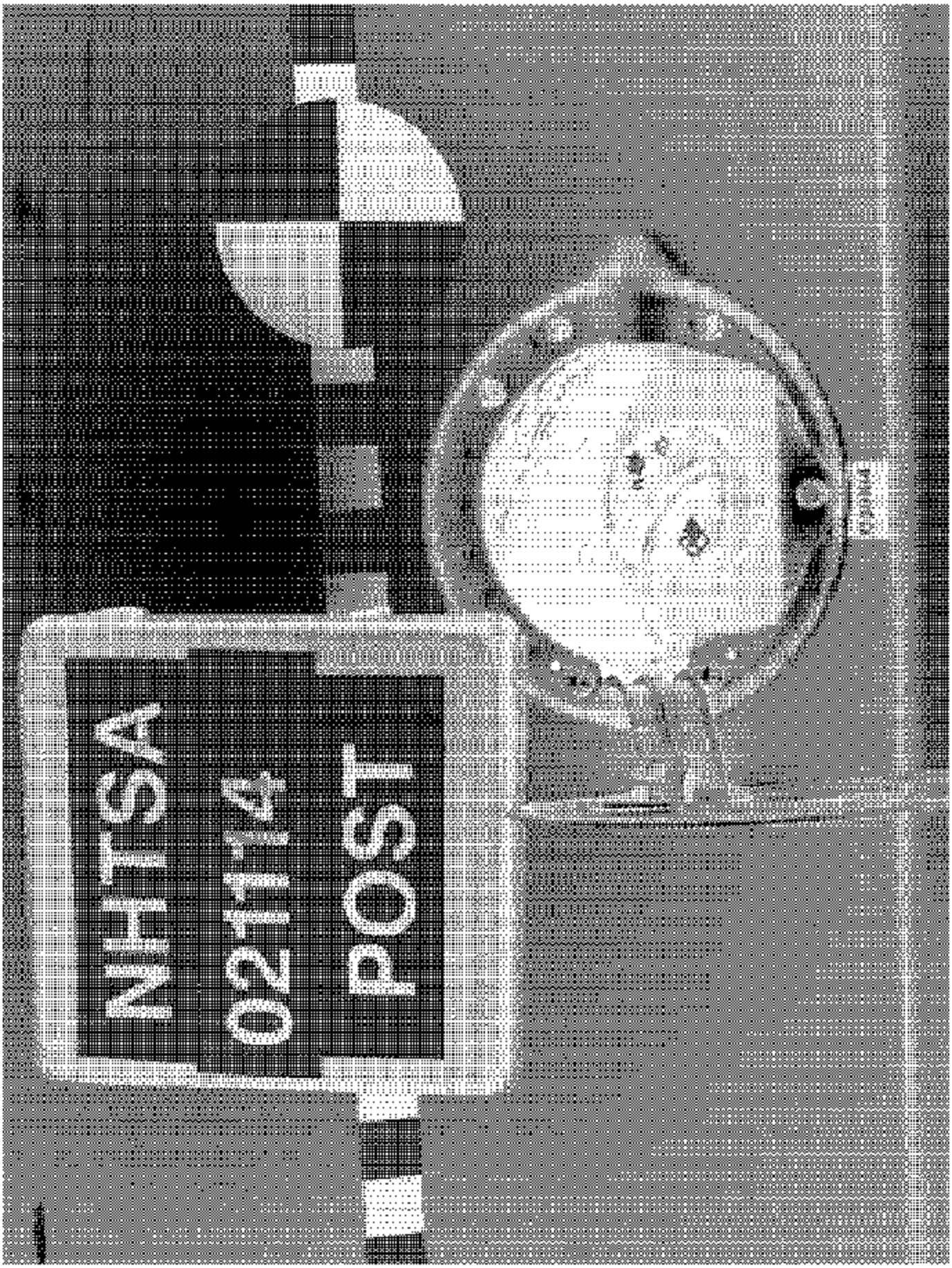

Image 39 Post-Test Fuel Filler Cap View

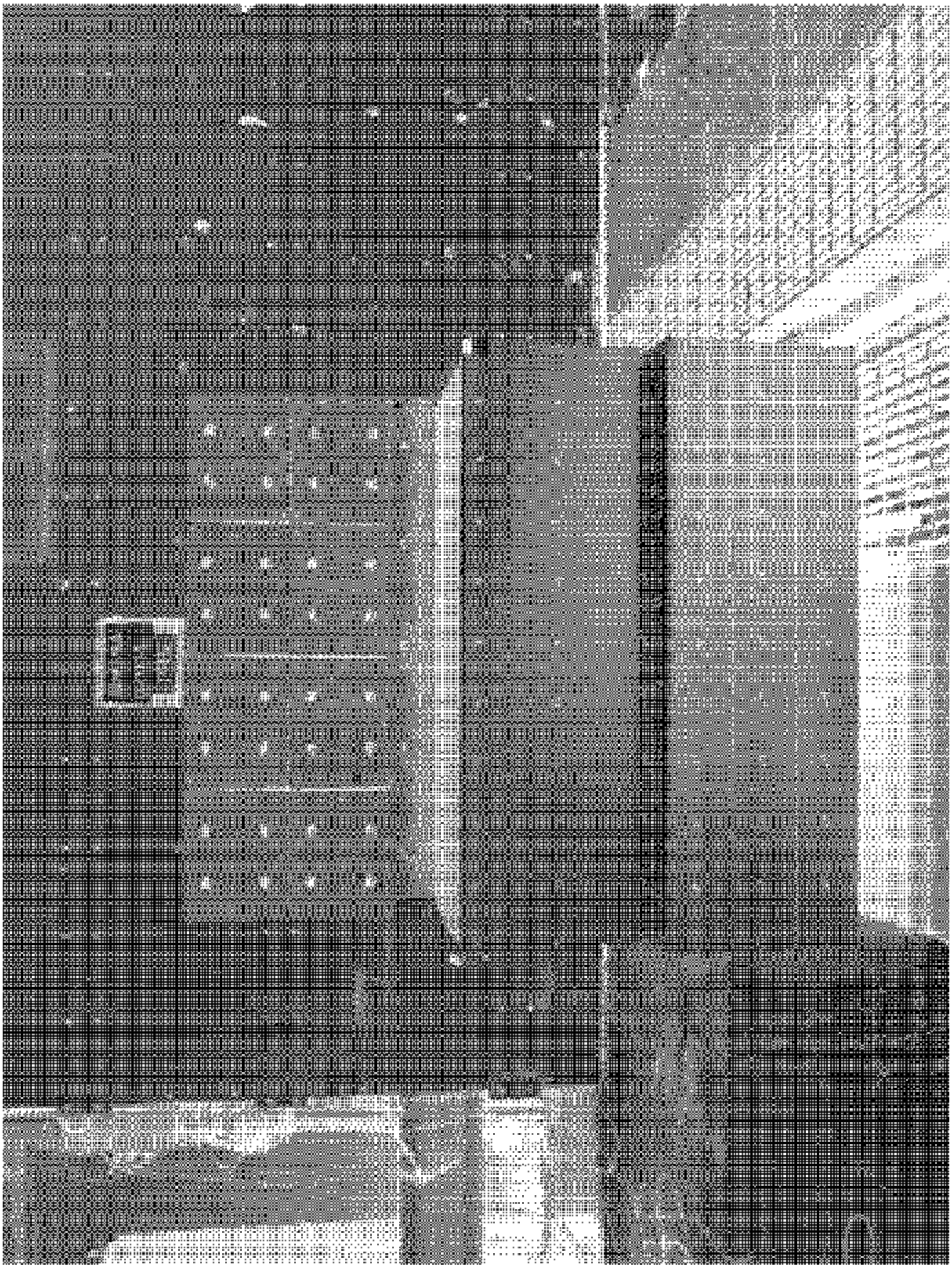

Image 40 Pre-Test Offset Barrier Face Front View

Image 41 Post-Test Offset Barrier Face Front View

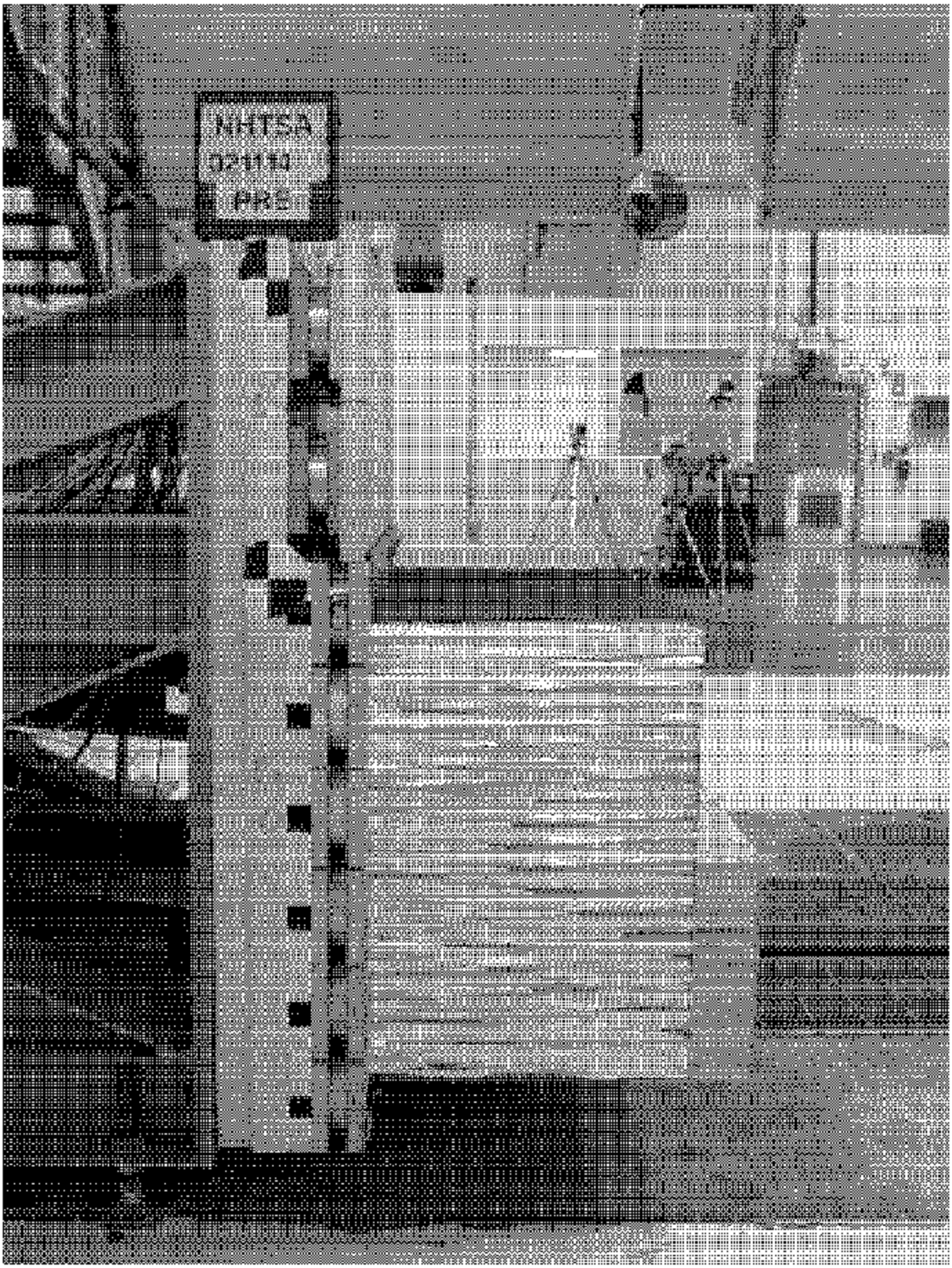

Image 42 Pre-Test Offset Barrier Face Left Side View

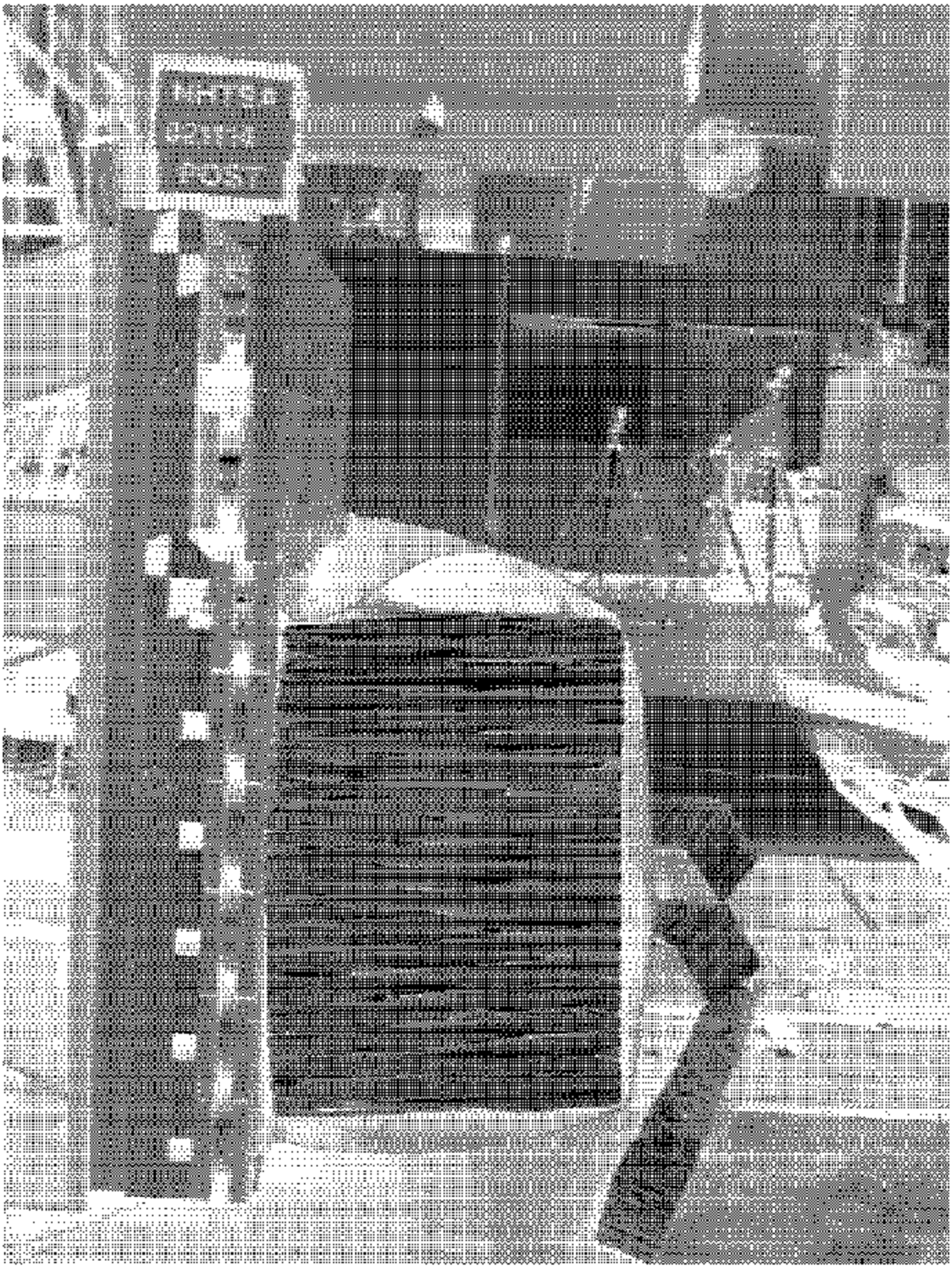

Image 43 Post-Test Offset Barrier Face Left Side View

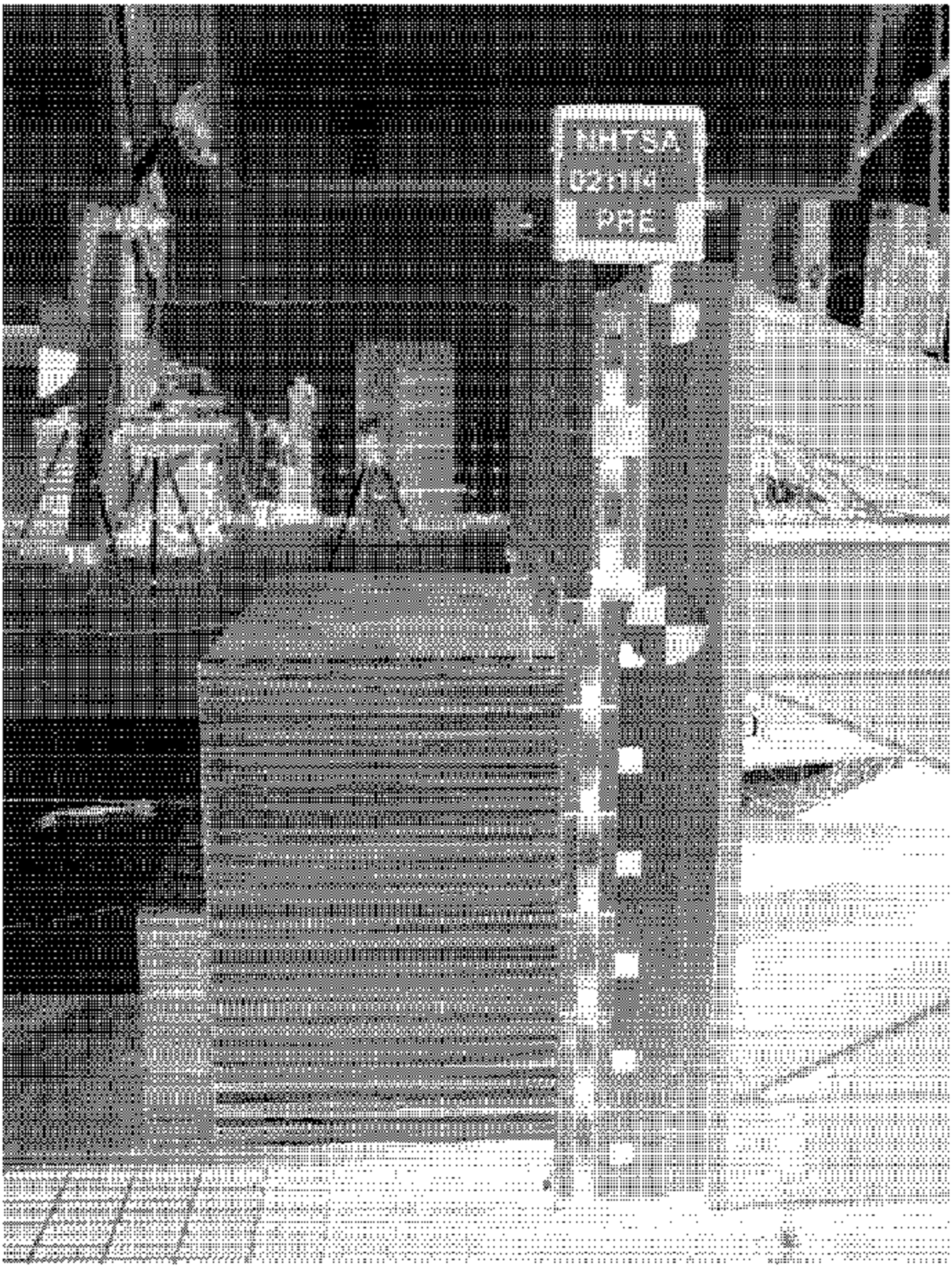

Image 44 Pre-Test Offset Barrier Face Right Side View

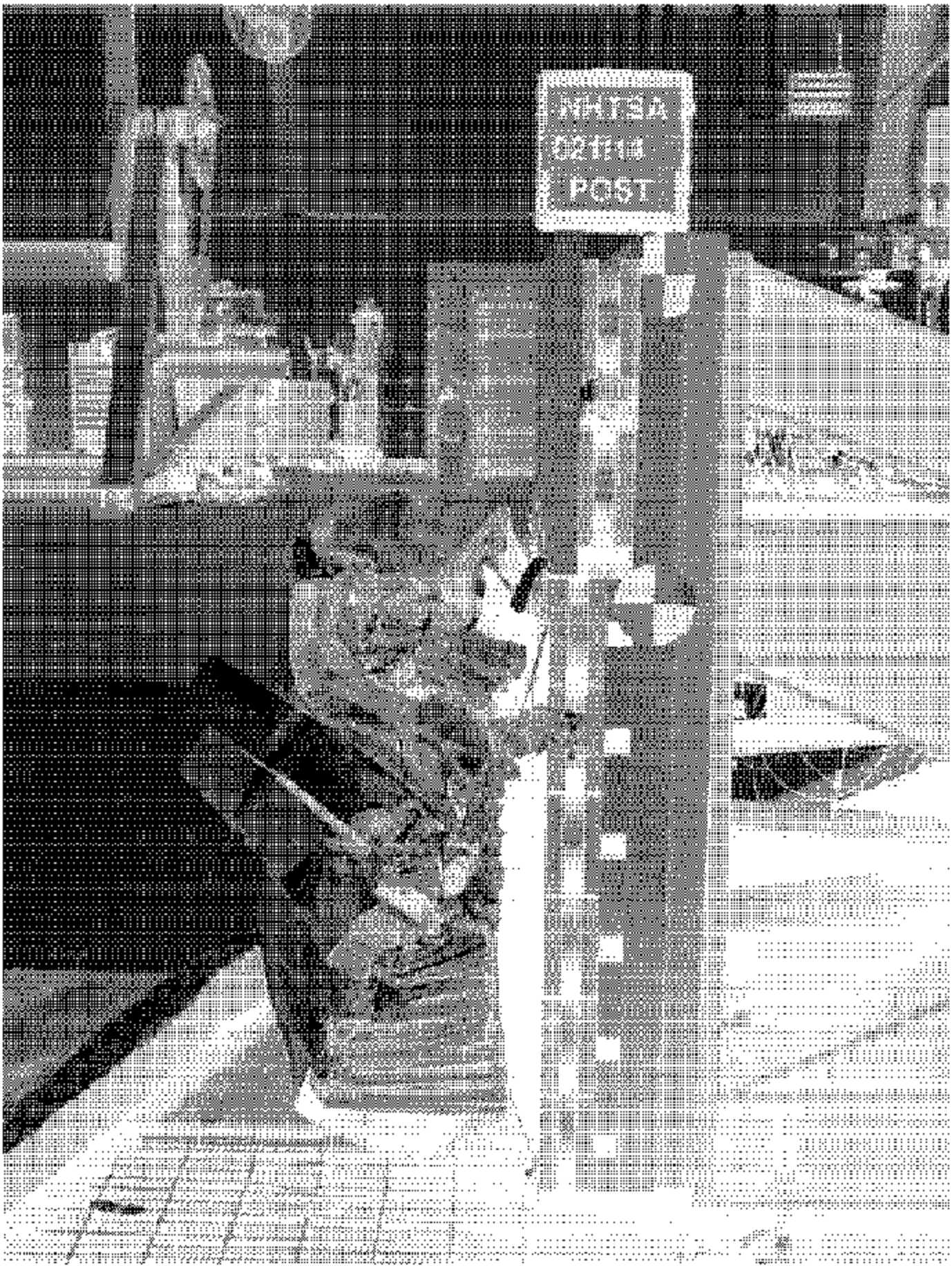

Image 45 Post-Test Offset Barrier Face Right Side View

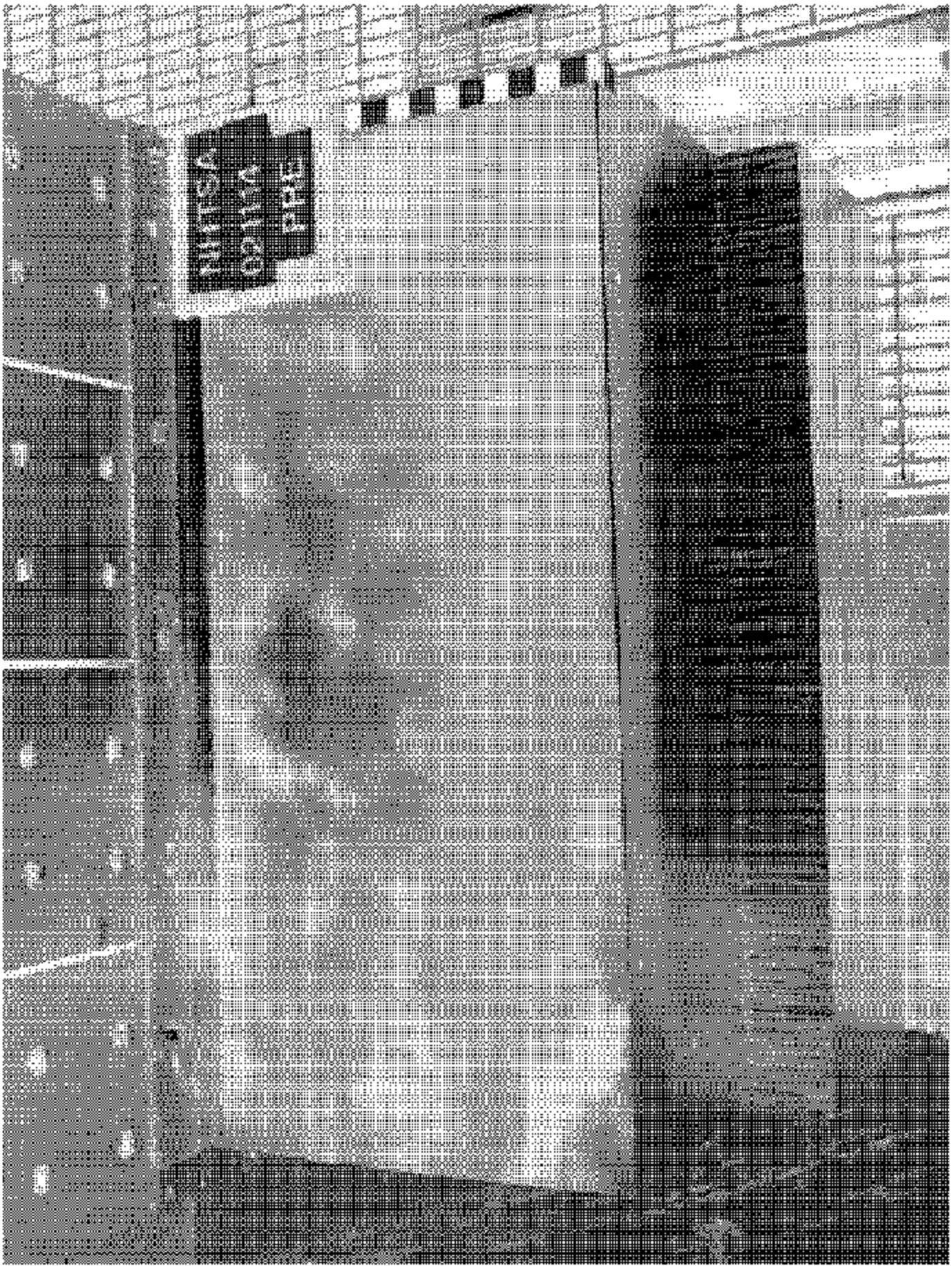

Image 46 Pre-Test Offset Barrier Face Overhead View

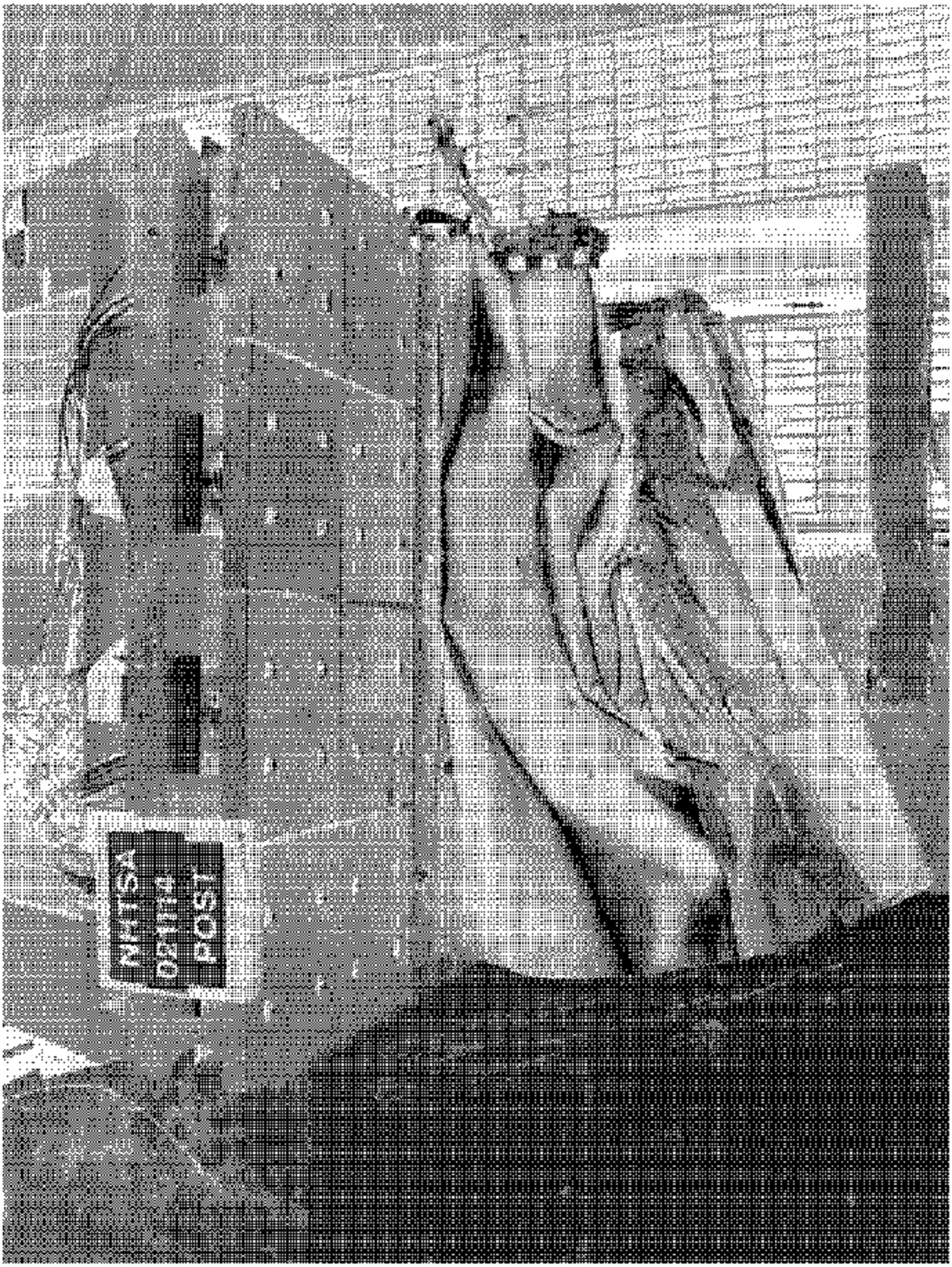

Image 47 Post-Test Offset Barrier Face Overhead View

Image 48 Pre-Test Driver Dummy Front View

Image 49 Post-Test Driver Dummy Front View

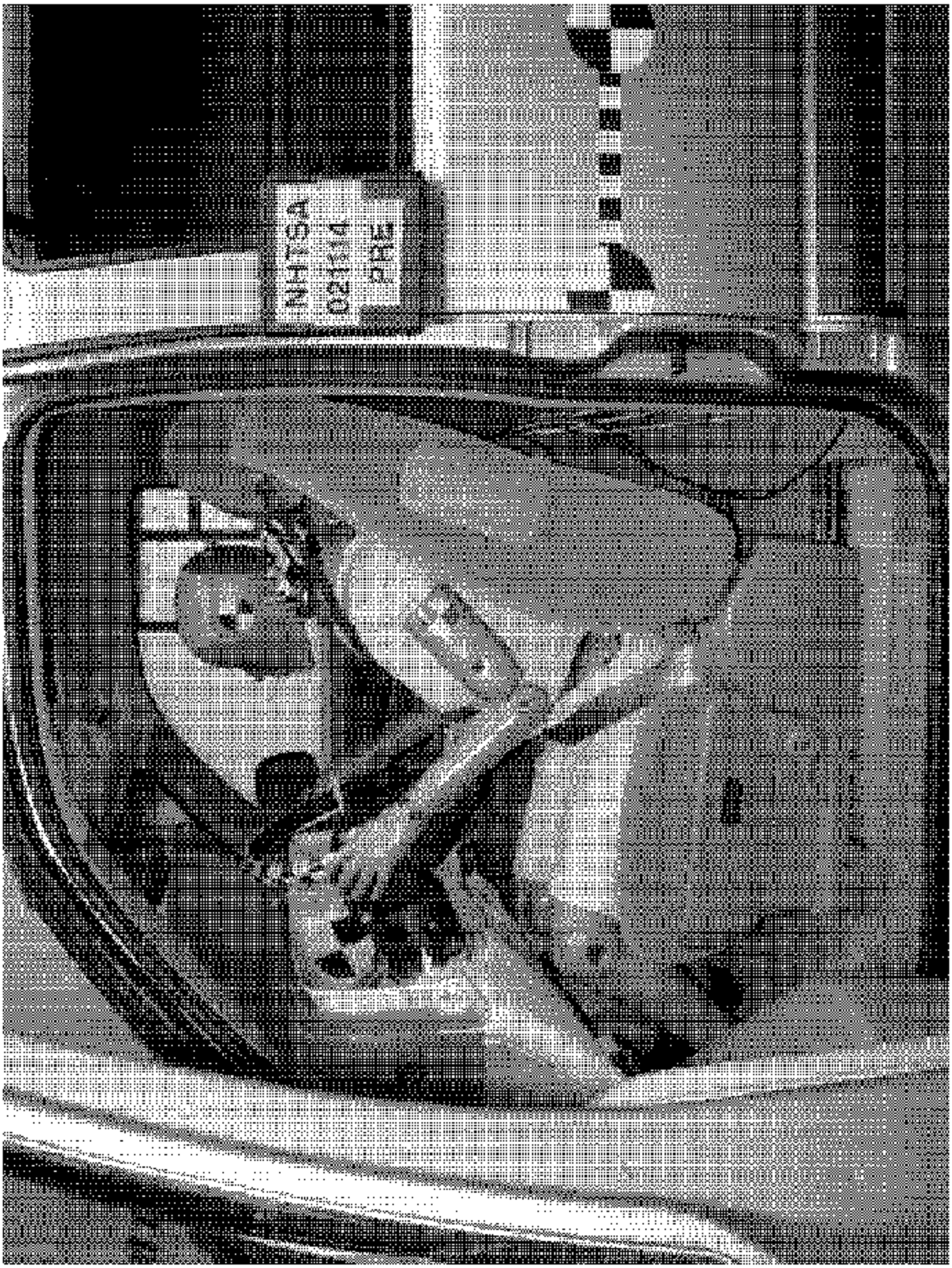

Image 50 Pre-Test Driver Dummy Position View

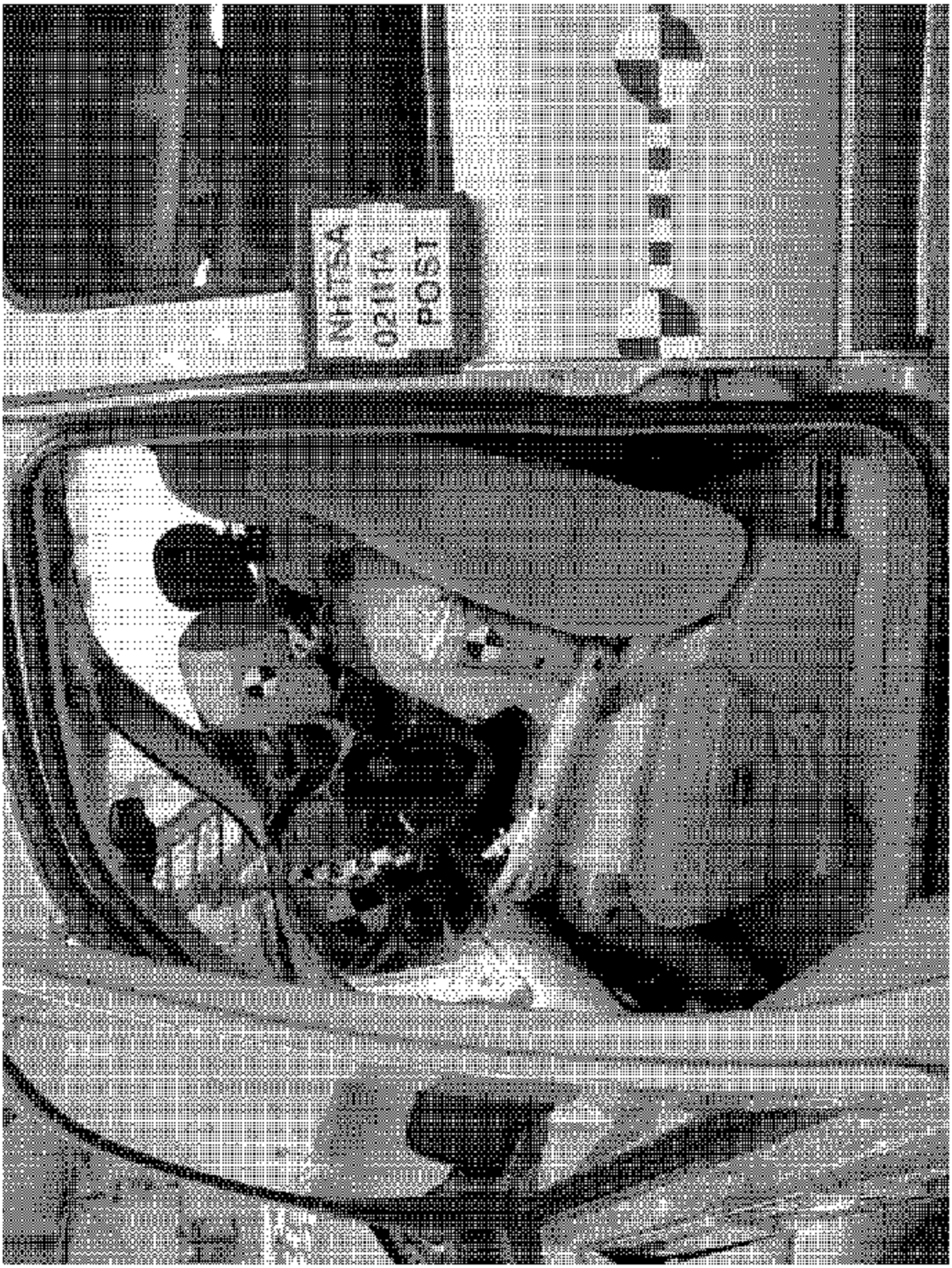

Image 51 Post-Test Driver Dummy Position View

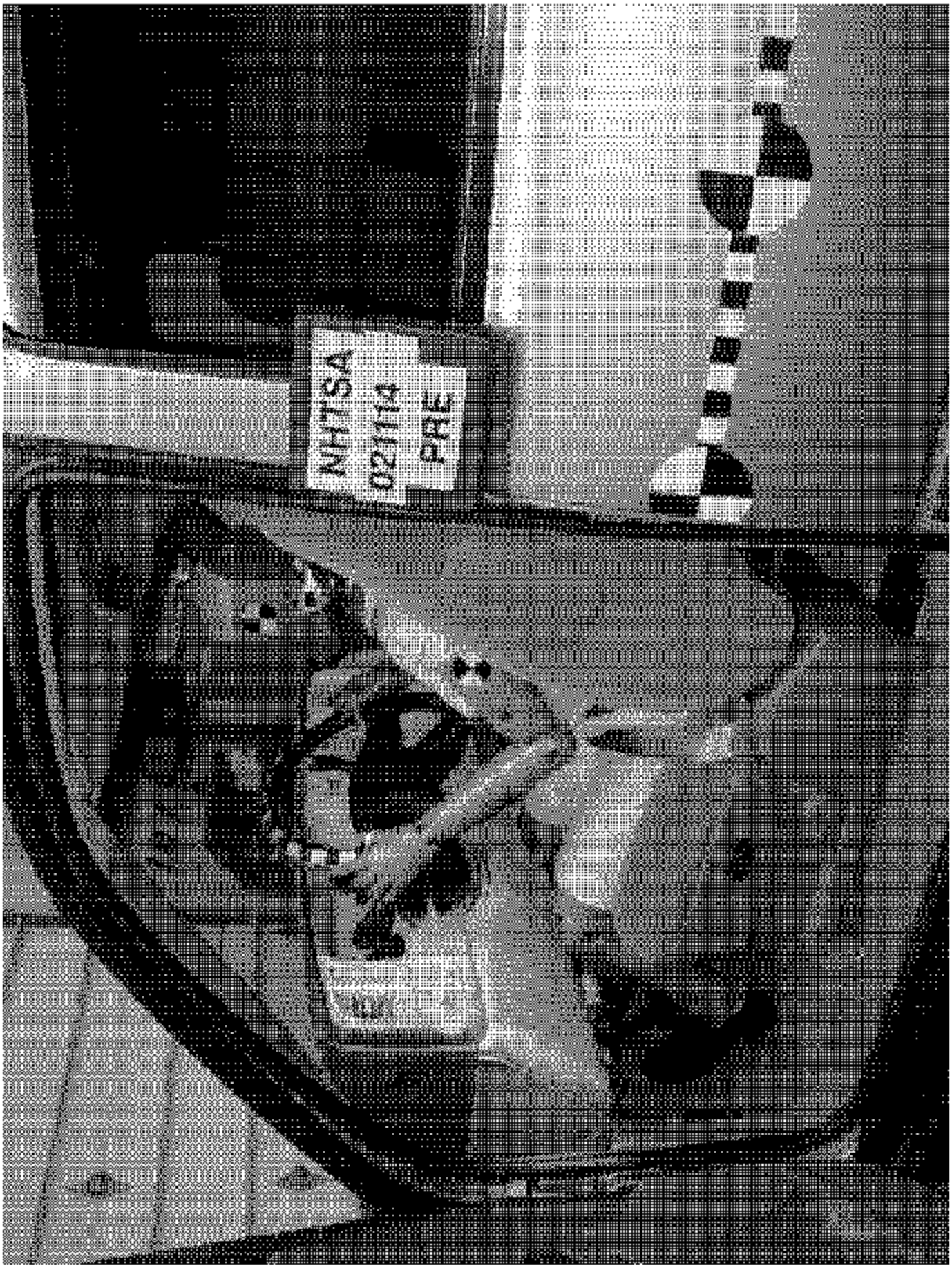

Image 52 Pre-Test Driver Dummy & Vehicle Intrusion View

Image 53 Post-Test Driver Dummy & Vehicle Intrusion View

Image 54 Pre-Test Passenger Dummy Front View

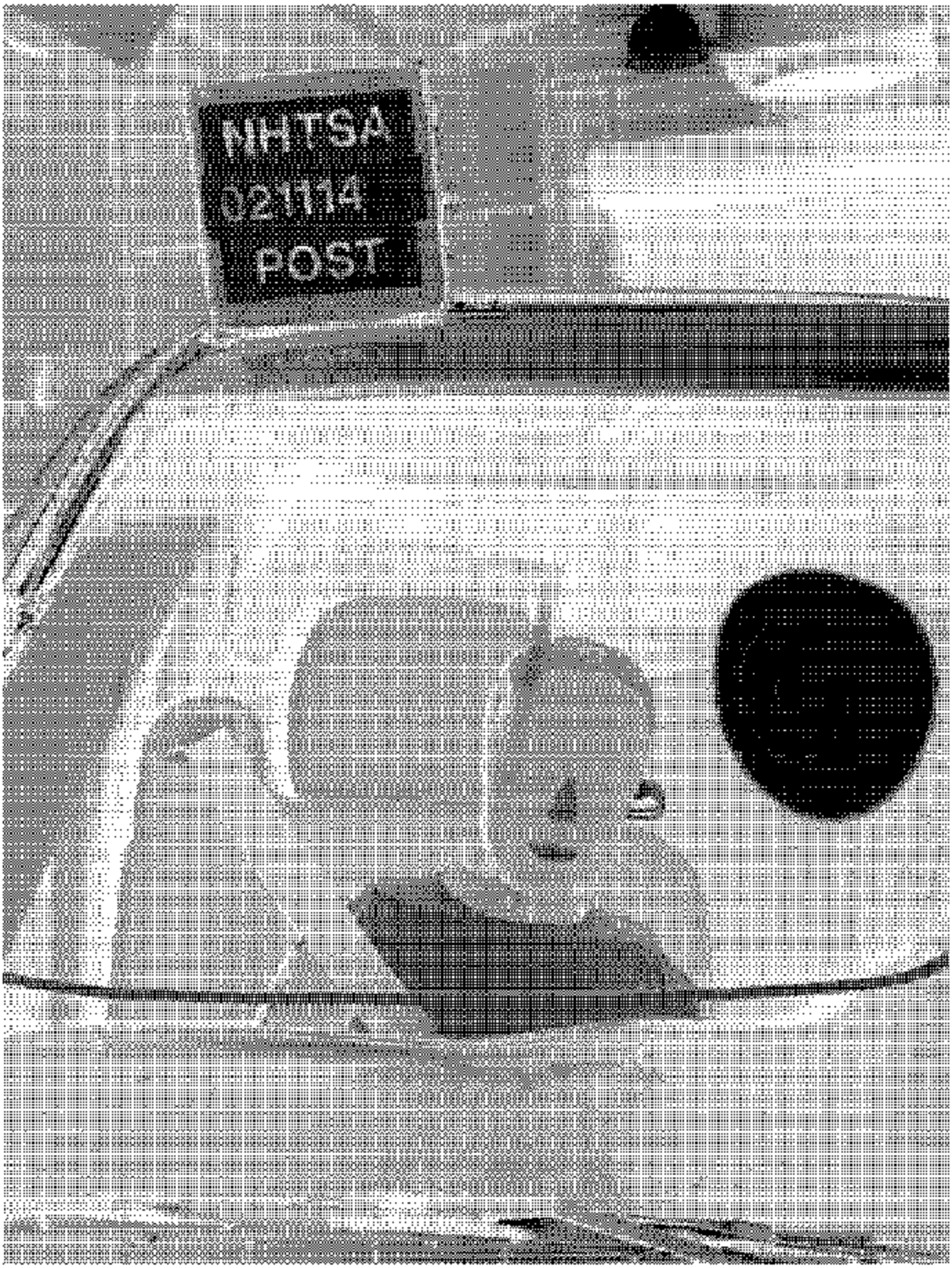

Image 55 Post-Test Passenger Dummy Front View

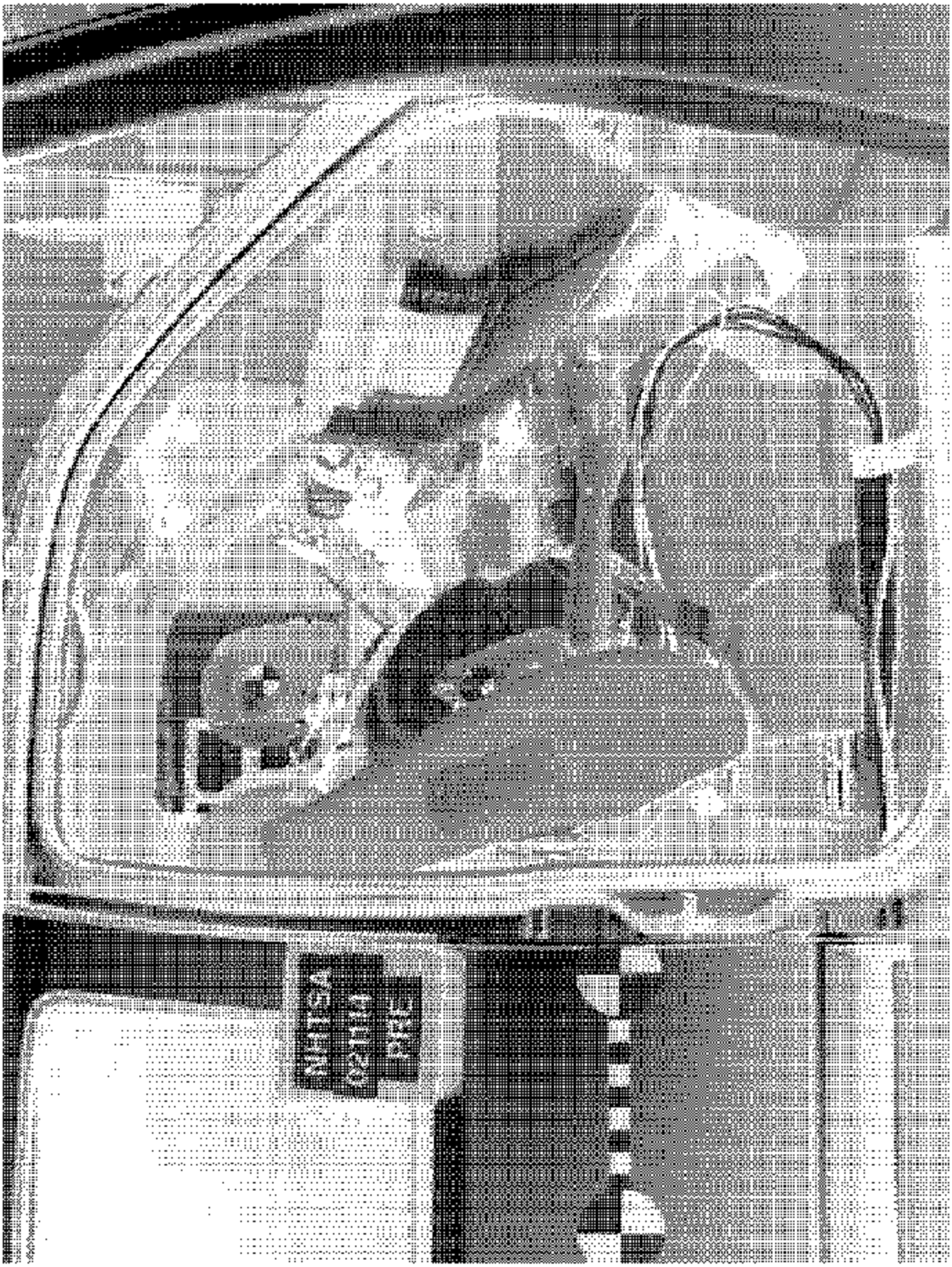

Image 56 Pre-Test Passenger Dummy Position View

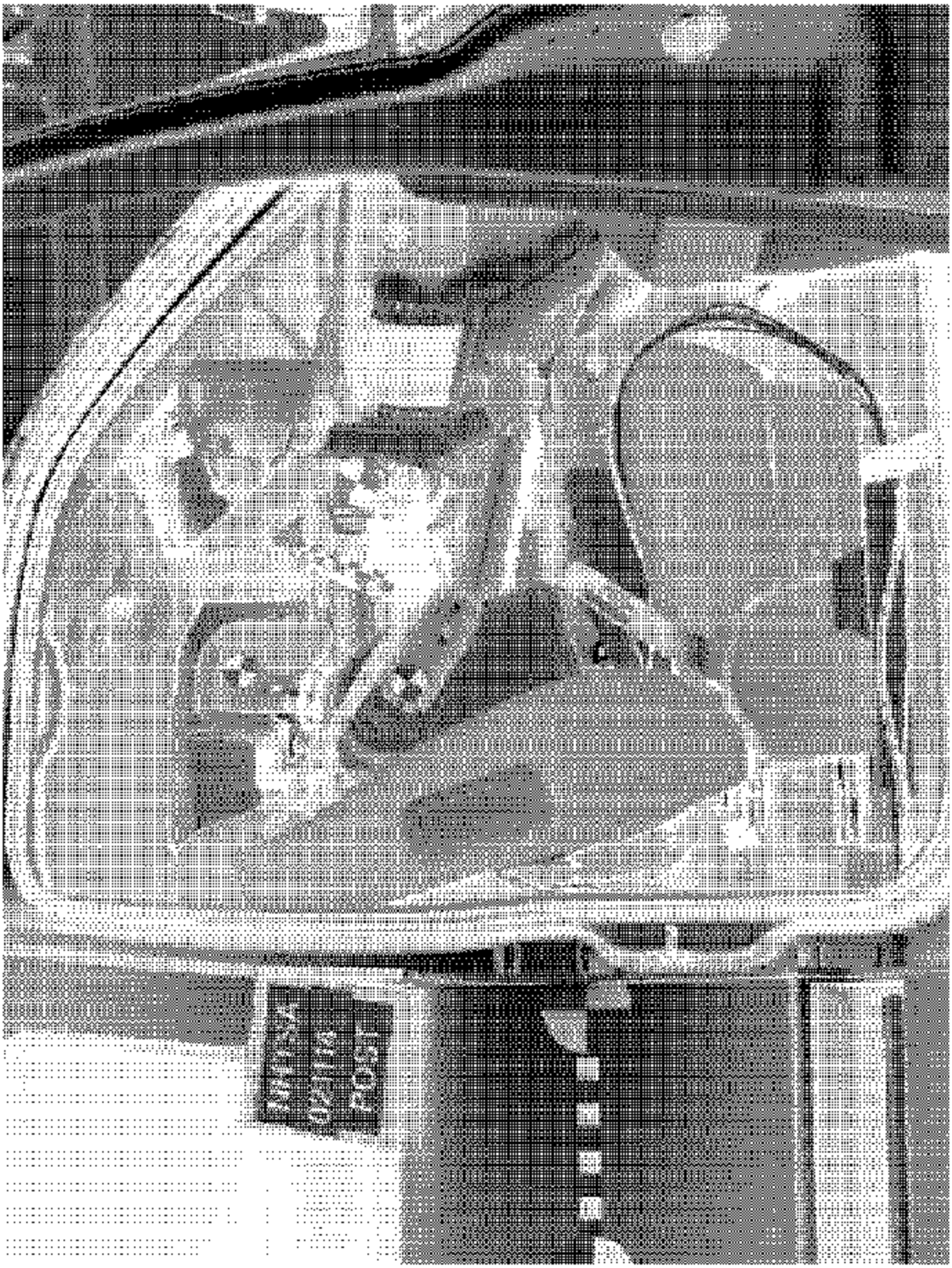

Image 57 Post-Test Passenger Dummy Position View

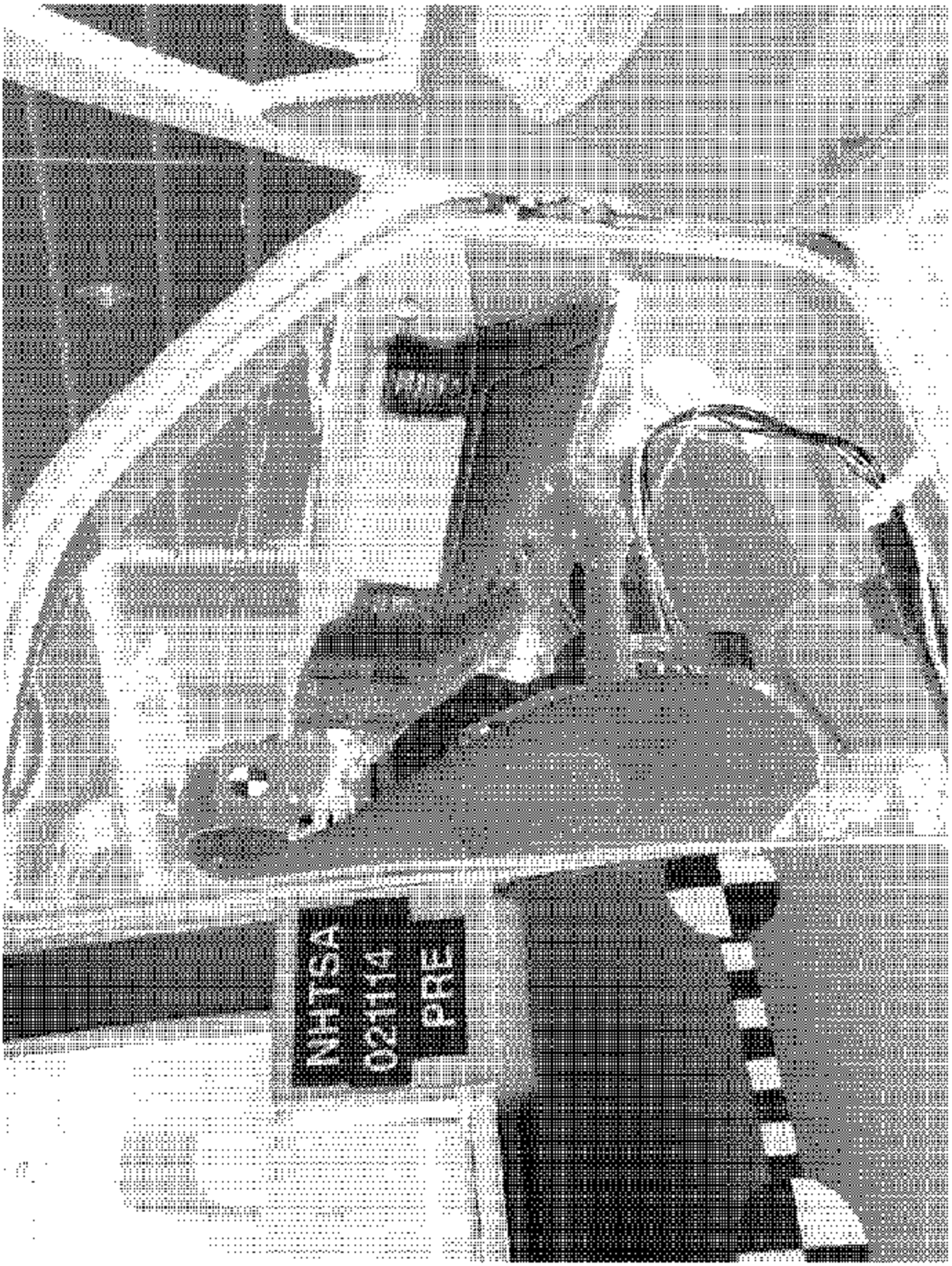

Image 58 Pre-Test Passenger Dummy & Vehicle Intrusion View

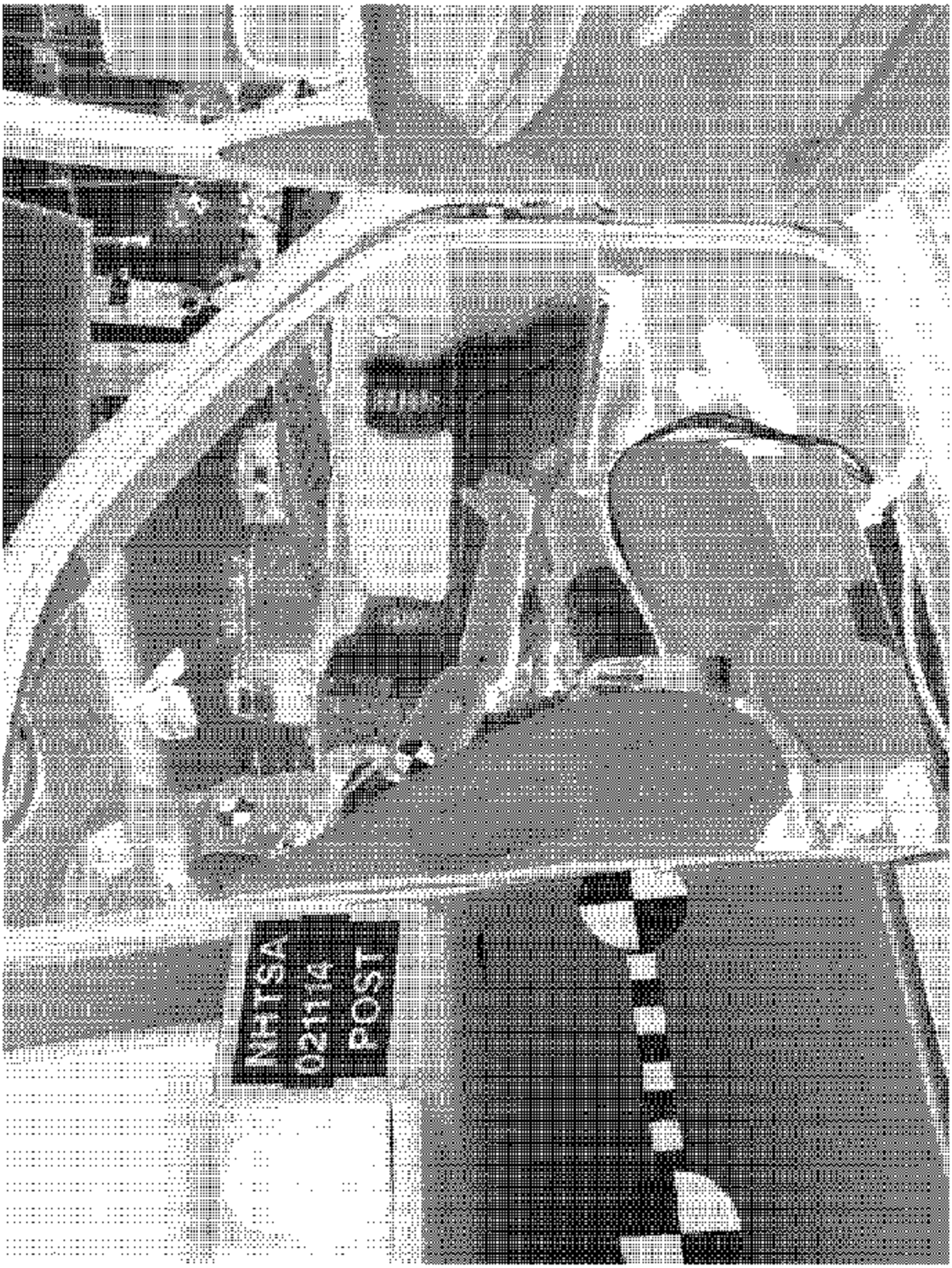

Image 59 Post-Test Passenger Dummy & Vehicle Intrusion View

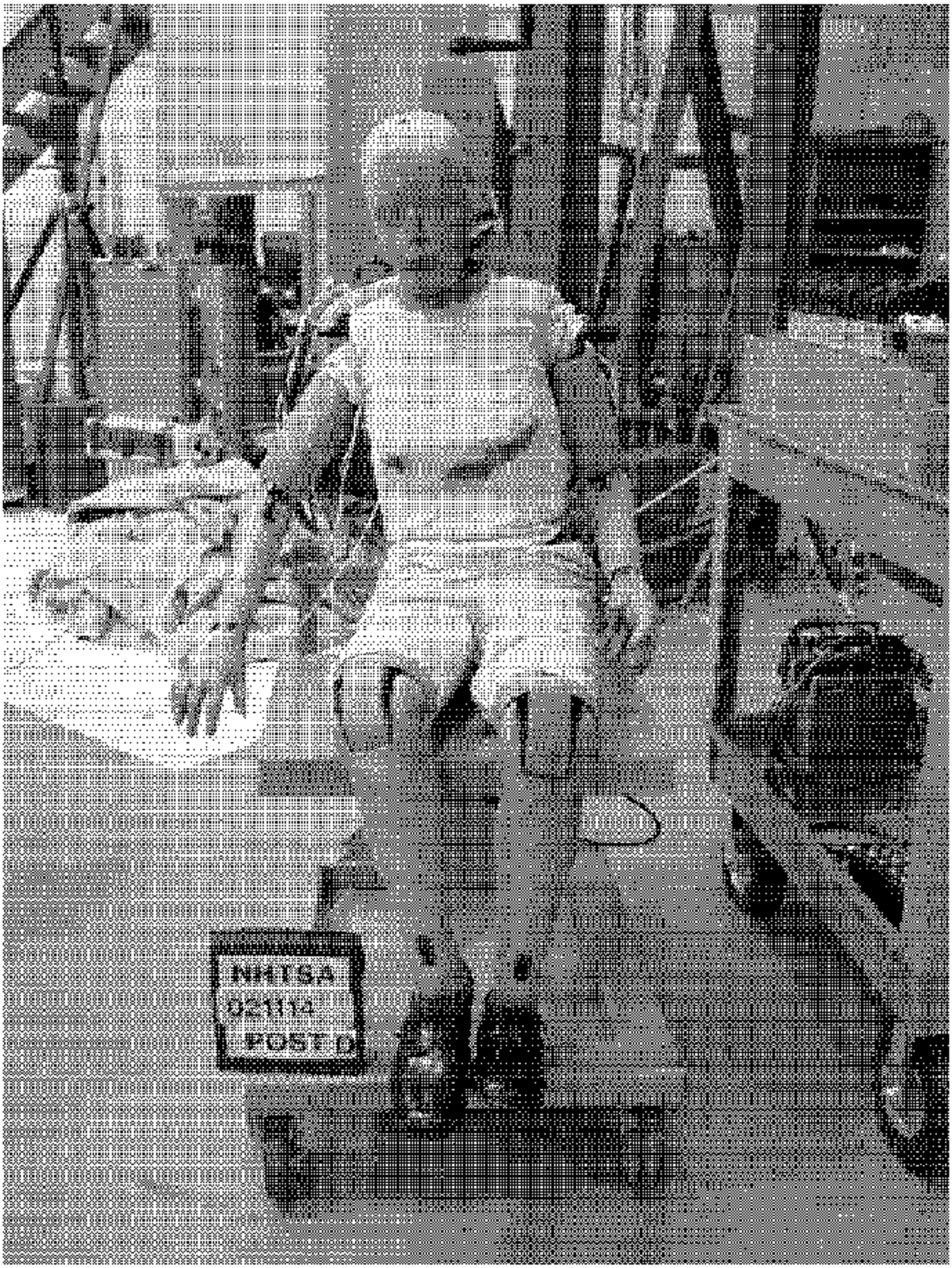

Image 60 Post-Test Driver Dummy View

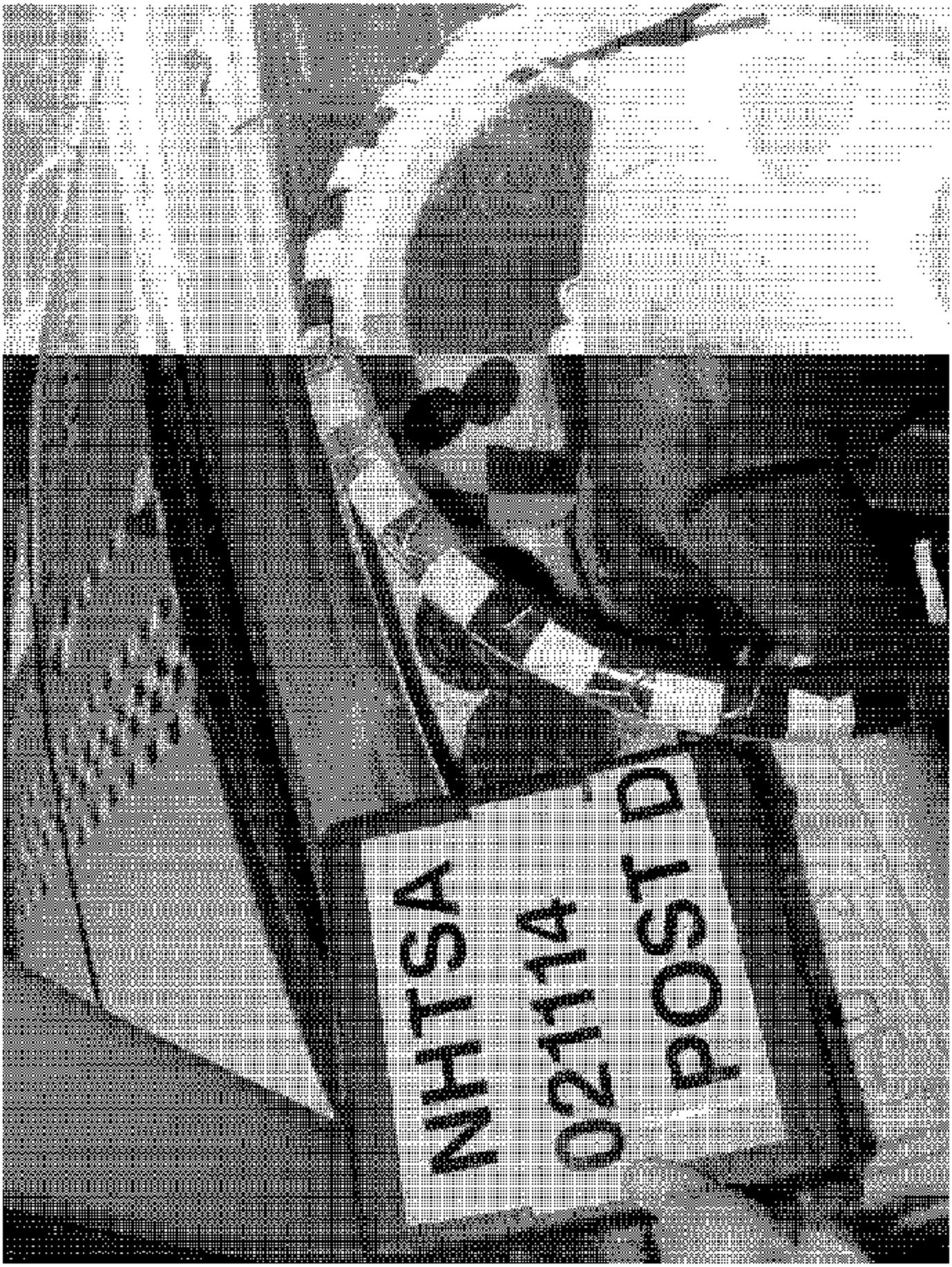

Image 61 Post-Test Driver Dummy Head Contact - View 1

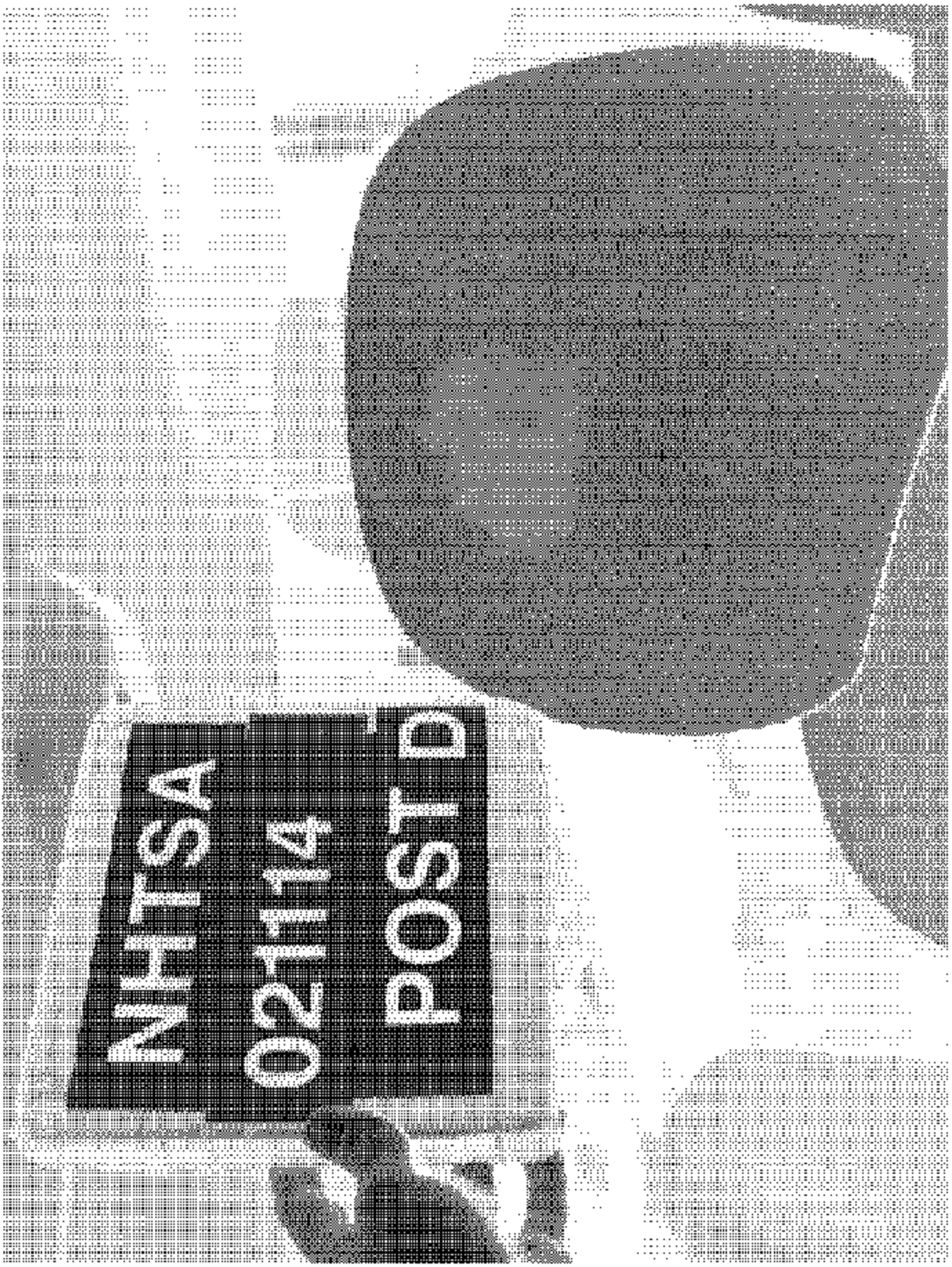

Image 62 Post-Test Driver Dummy Head Contact - View 2

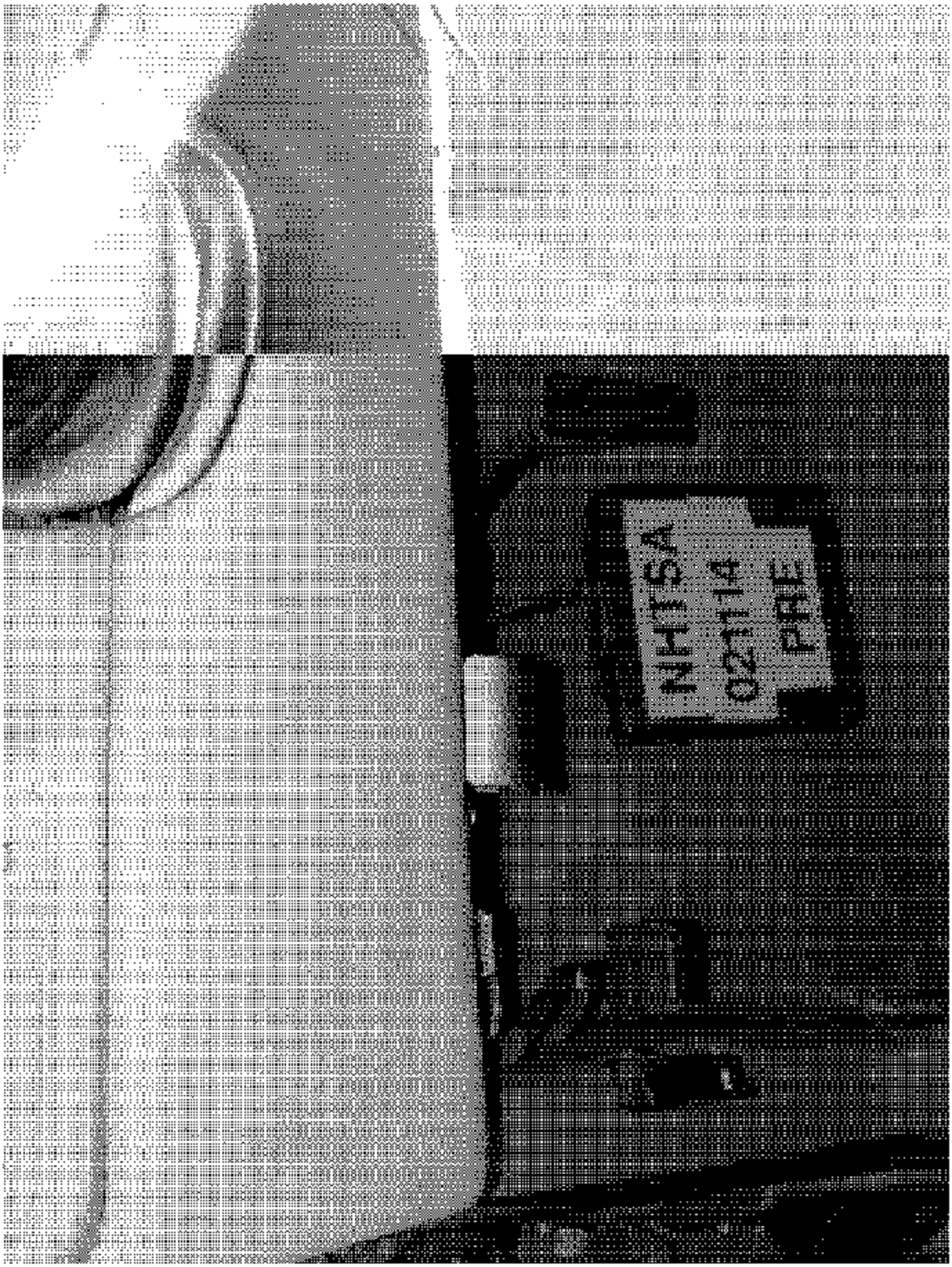

Image 63 Pre-Test Driver Dummy Knee Bolster View

Image 64 Post-Test Driver Dummy Knee Contact View

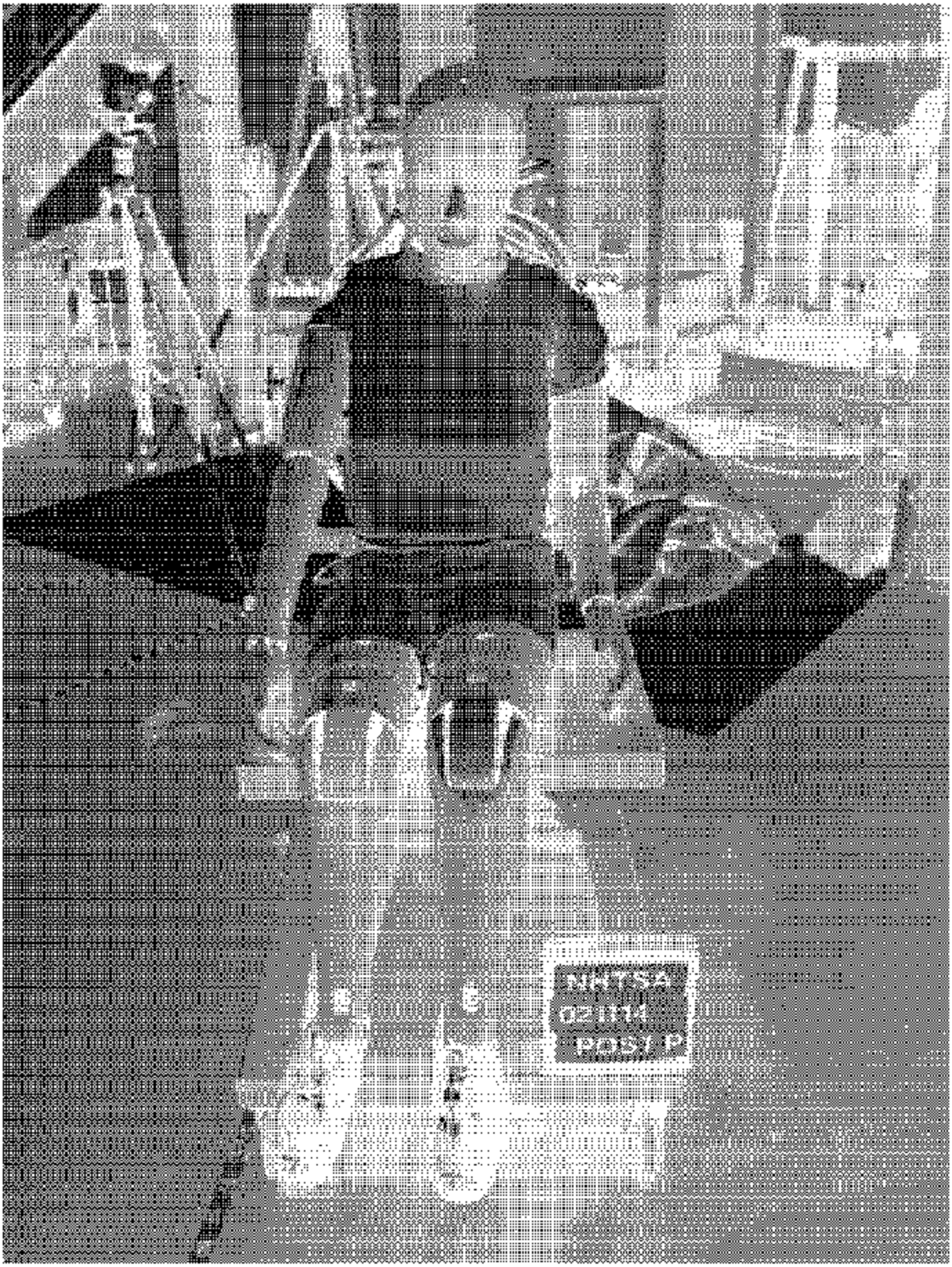

Image 65 Post-Test Passenger Dummy View

Image 66 Post-Test Passenger Dummy Head Contact - View 1

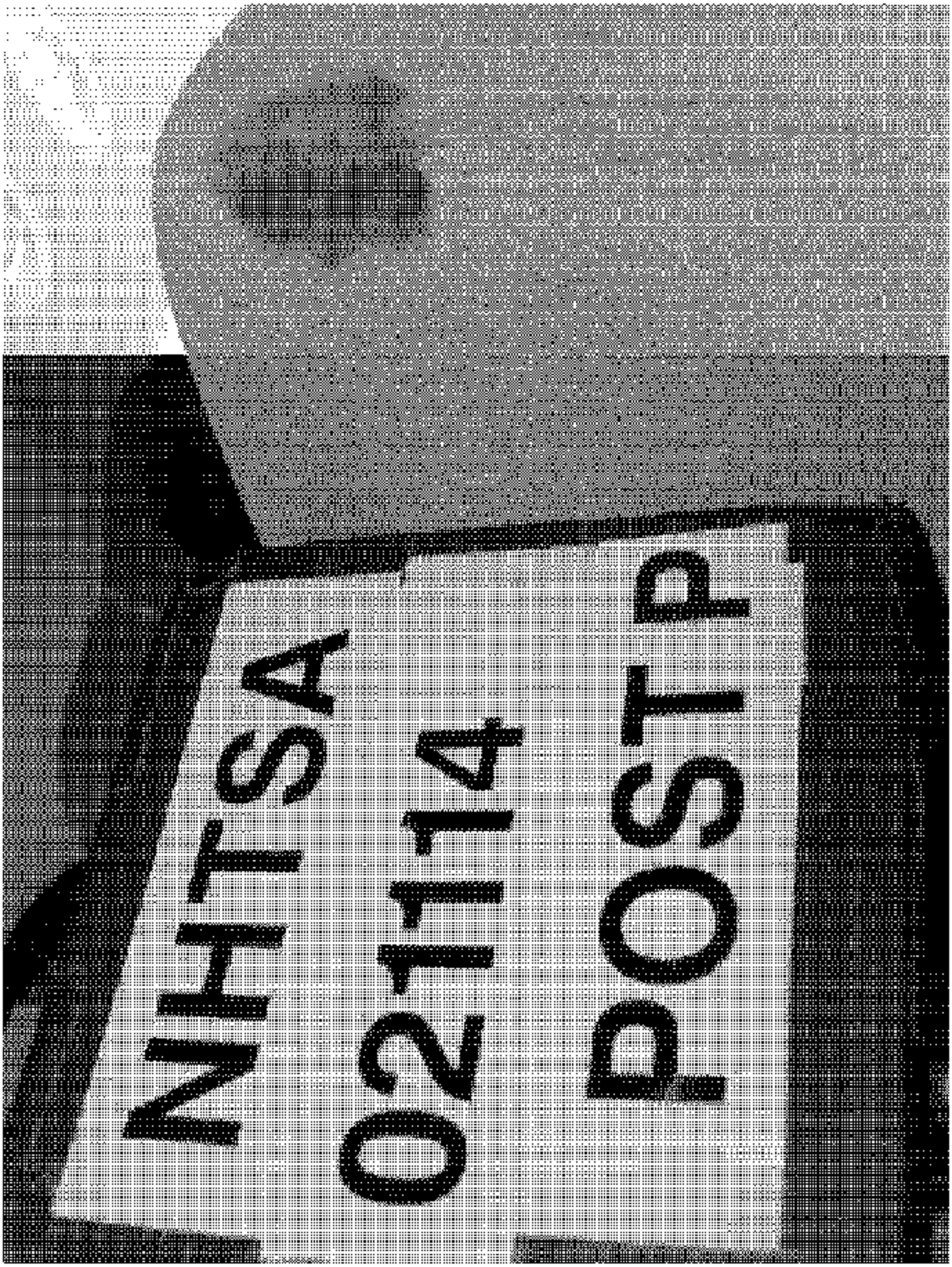

Image 67 Post-Test Passenger Dummy Head Contact - View 2

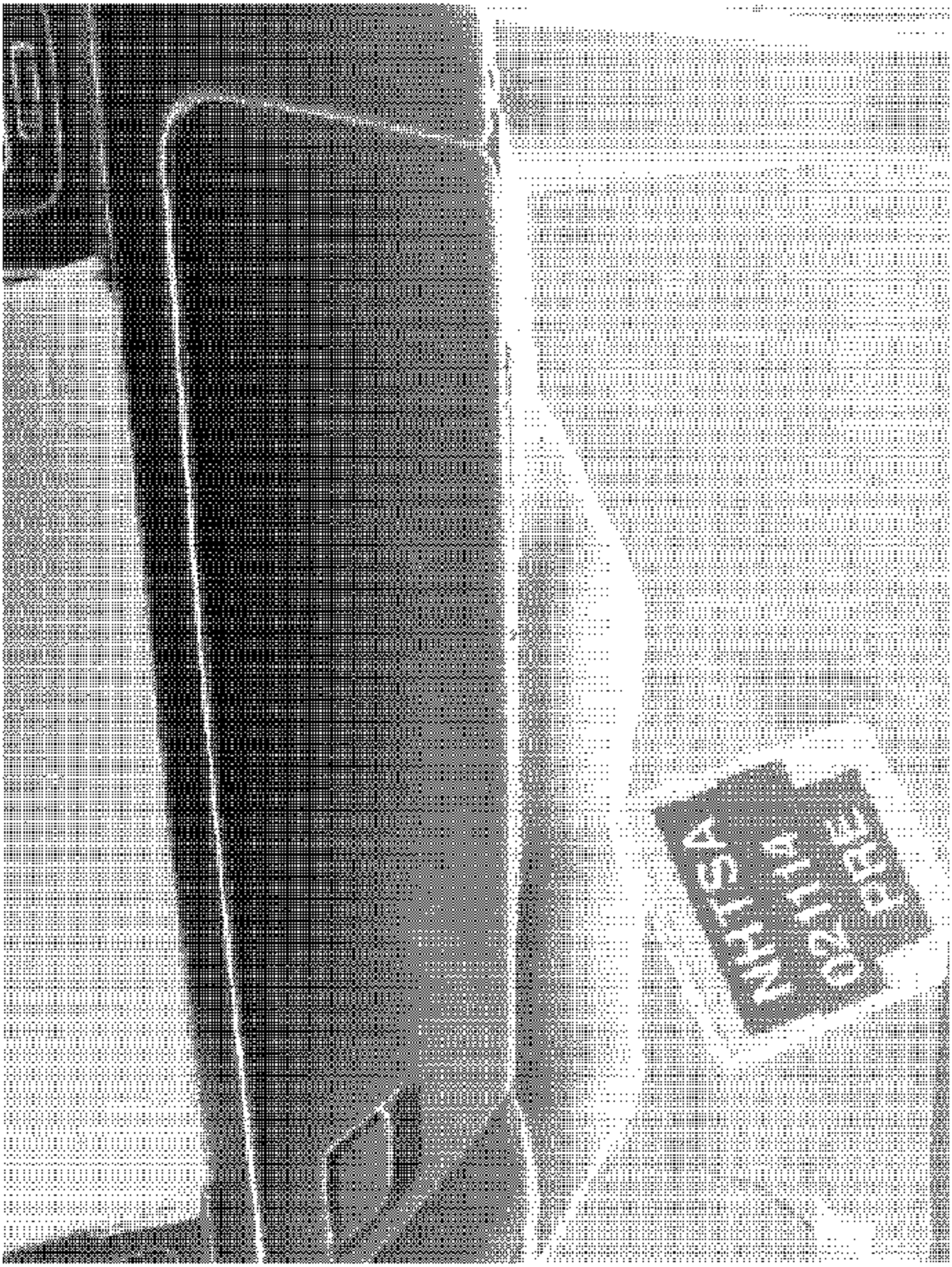

Image 68 Pre-Test Passenger Dummy Knee Bolster View

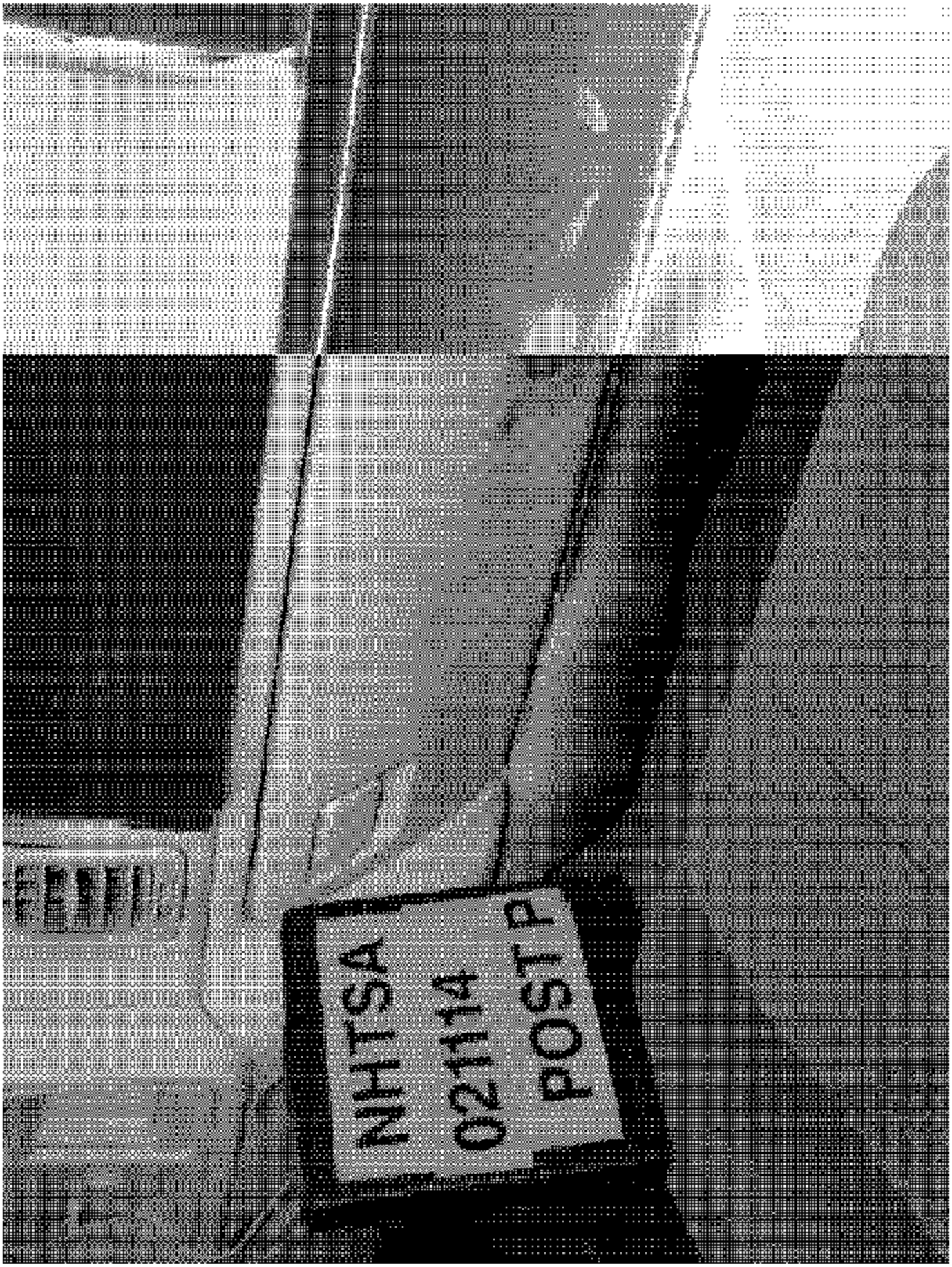

Image 69 Post-Test Passenger Dummy Knee Contact View

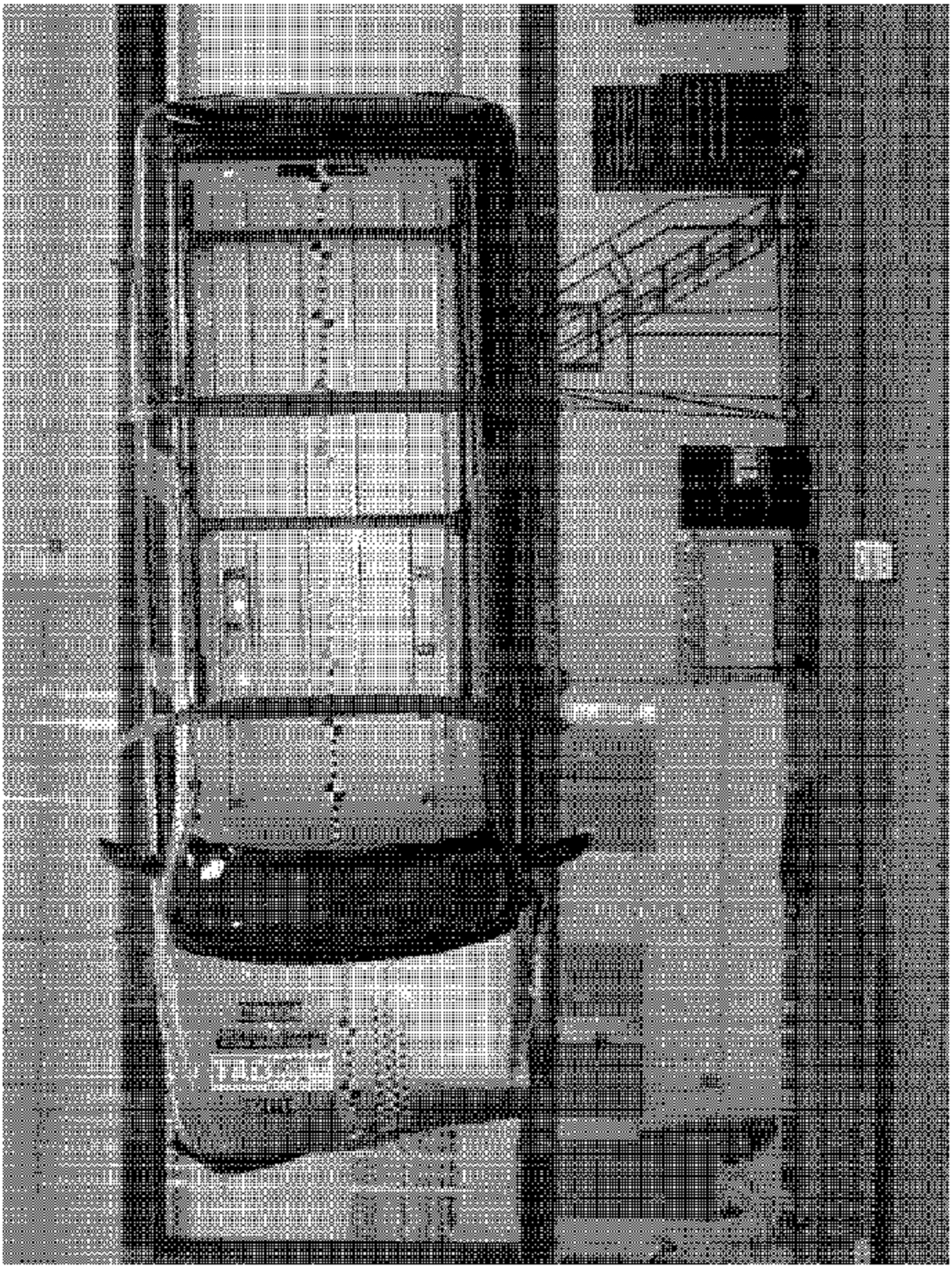

Image 70 Post-Test Vehicle on Static Rollover Device - 90° View

Image 71 Pre-Test Vehicle Ballast View

Image 72 Pre-Test Vehicle Certification and Recommended Tire Pressure Label View

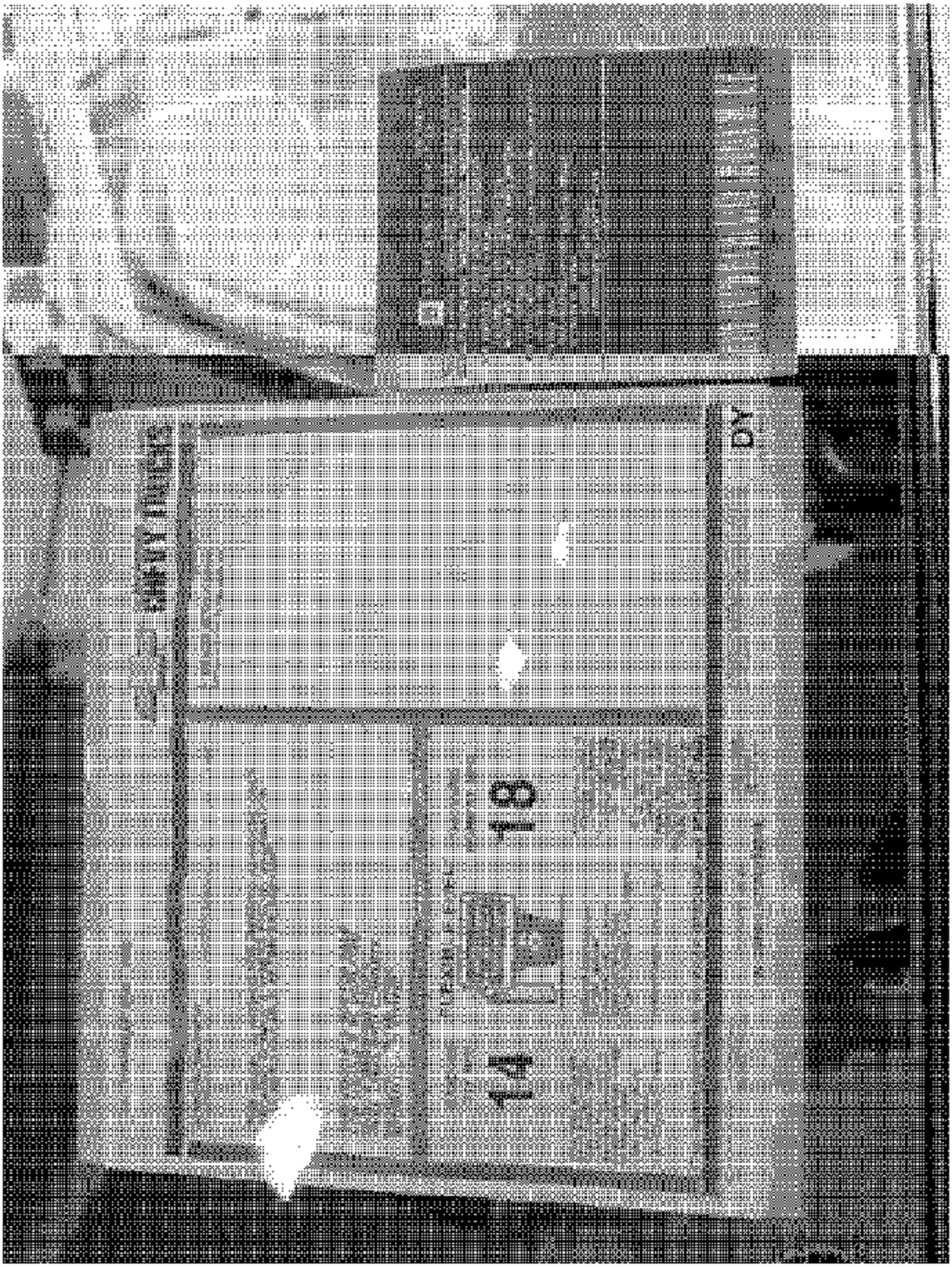

Image 73 Pre-Test Vehicle Window Sticker

Appendix A

Test Equipment List and Calibration Information

Dummy 421v(208) **Type** HYBRID III 5th **Description** VRTC - 421v HYBRID III 5th Female (208 Config) ICAL'd 6-2-01(DKS 10-24-02)J211

Chsname	Location	Model	Name	Manufacturer	Sens./mV/V/U		Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X	EGE-73B6Q-20	02I02I16-A13	Entran	0.023	g	2000	9/24/02	Rr	1
HEDYG	Head Accel Y	EGE-73B6Q-20	02I02I16-A08	Entran	0.0213	g	2000	9/24/02	Lft	1
HEDZG	Head Accel Z	EGE-73B6Q-20	02I02I16-A18	Entran	0.0225	g	2000	9/24/02	Up	1
NEKXF	Neck Force X	IF-205	IF-205-180-FX	FTSS	0.00018243	N	8896	3/18/02	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	IF-205	IF-205-180-FY	FTSS	0.000175596	N	8896	3/18/02	Hd Lf,Cst Rt	0
NEKZF	Neck Force Z	IF-205	IF-205-180-FZ	FTSS	0.000092266	N	13344	3/18/02	Hd Up,Cst Dr	0
NEKXM	Neck Moment X	IF-205	IF-205-180-MX	FTSS	0.005577699	N-m	282.5	3/18/02	Rt Ear to Rt Shld	1
NEKYM	Neck Moment Y	IF-205	IF-205-180-MY	FTSS	0.009602124	N-m	282.5	3/18/02	Chin to Strnm	0
NEKZM	Neck Moment Z	IF-205	IF-205-180-MZ	FTSS	0.008122478	N-m	282.5	3/18/02	Chn to Lt Shld	0
CSTXG	Chest Accel X	EGE-73B6Q-20	B02A25-N03	Entran	0.02163	g	2000	8/5/02	Fwd	0
CSTYG	Chest Accel Y	EGE-73B6Q-20	02A18-N12	Entran	0.01926	g	2000	8/5/02	Lft	1
CSTZG	Chest Accel Z	EGE-73B6Q-20	B02A25-N10	Entran	0.01967	g	2000	8/5/02	Up	1
CSTXD	Chest Deflection X	14CB1-2897	14CB1-2897-1355	Servo	1.70969	mm	300	3/25/02	Strnm Away Frm Spn	0
PEVXG	Pelvis Accel X	7264-2000LC	AF9K3	Endevco	0.0212	g	2000	8/5/02	Rwd	1
PEVYG	Pelvis Accel Y	EGE-73B6Q-20	02A16-A26	Entran	0.02009	g	2000	8/5/02	Lft	1
PEVZG	Pelvis Accel Z	EGE-73B6Q-20	02A18-N15	Entran	0.01877	g	2000	8/5/02	Up	1
LFMZF	Lft Femur Force Z S37	2430	2430-739	GSE	0.000067676	N	13344	3/18/02	Knee Fd,Pel Rr	0
RFMZF	Right Femur Force Z VRTC 4	2430	2430-760	GSE	0.000067069	N	13344	3/18/02	Knee Fd,Pel Rr	0

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Dummy 426v **Type** HYBRID III 5tE **Description** VRTC - 426v HYBRID III 5th Female ICAL'd 11-06-01(DKS11-13-02)J211

Chname	Location	Model	Name	Manufacturer	Sens./mV/V/U		Fullscale	Caldate	Pos Output	Flip
HEDXG	Head Accel X	7264C-2KLC-2-	P17837	Endevco	0.01415	g	2000	11/6/02	Rr	1
HEDYG	Head Accel Y	7264C-2KLC-2-	P17559	Endevco	0.0141006	g	2000	11/6/02	Lft	1
HEDZG	Head Accel Z	7264C-2KLC-2-	P15856	Endevco	0.01471	g	2000	11/6/02	Up	1
NEKXF	Neck Force X	IF-205	IF-205-287-FX	FTSS	0.000178125	N	8896.4	11/6/02	Hd Fd,Cst Rr	1
NEKYF	Neck Force Y	IF-205	IF-205-287-FY	FTSS	0.000171009	N	8896.4	11/6/02	Hd Lt,Cst Rt	0
NEKZF	Neck Force Z	IF-205	IF-205-287-FZ	FTSS	0.000090426	N	13344.6	11/6/02	Hd Up,Cst Dn	0
NEKXM	Neck Moment X	IF-205	IF-205-287-MX	FTSS	0.005443186	N-m	282.5	11/6/02	Rt Ear to Rt Shld	
NEKYM	Neck Moment Y	IF-205	IF-205-287-MY	FTSS	0.005449912	N-m	282.5	11/6/02	Chin to Sternm	0
NEKZM	Neck Moment Z	IF-205	IF-205-287-MZ	FTSS	0.008	N-m	282.5	11/6/02	Chn to Lt Shld	0
CSTXG	Chest Accel X	7264C-2KLC-2-	P16194	Endevco	0.0140458	g	2000	11/6/02	Fwd	0
CSTYG	Chest Accel Y	7264C-2KLC-2-	P16517	Endevco	0.01507	g	2000	11/6/02	Lft	1
CSTZG	Chest Accel Z	7264C-2KLC-2-	P16428	Endevco	0.0148929	g	2000	11/6/02	Up	1
CSTXD	Chest Deflection X	14CB1-2897	14CB1-2897-1392	Servo	1.6878	mm	100	11/13/02	Sternm Away Frm Spn	0
LFMZF	Left Femur Force Z #2	2121	2121-0257	Denton	0.000100243	N	13344.6	11/6/02	Knee Fd,Pel Rr	0
RFMZF	Right Femur Force Z #12	2121	2121-0258	Denton	0.000099478	N	13344.6	11/6/02	Knee Fd,Pel Rr	0

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Channel Report

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Name of Test 021114 **System** MINIDAU **Name of DAU** DAUA

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.		Group	Mfg.	Model
0001	EVENT	SYNCA	SYNCA		5.12	V	-	10/15/2002	OK	-1	TRC	Event
0002	02102116-A13	HEDXG1	Head Accel X	Rr	795.03105	g	-	9/24/2002	OK	421v(20	Entran	EGE-73B6Q-200
0003	02102116-A08	HEDYG1	Head Accel Y	Lft	801.25195	g	-	9/24/2002	OK	421v(20	Entran	EGE-73B6Q-200
0004	02102116-A18	HEDZG1	Head Accel Z	Up	812.69841	g	-	9/24/2002	OK	421v(20	Entran	EGE-73B6Q-200
0005	IF-205-180-FX	NEKXF1	Neck Force X	Hd	13361.552	N	-	3/18/2002	OK	421v(20	FTSS	IF-205
0006	IF-205-180-FY	NEKYF1	Neck Force Y	Hd	13375.155	N	+	3/18/2002	OK	421v(20	FTSS	IF-205
0007	IF-205-180-FZ	NEKZF1	Neck Force Z	Hd	20033.115	N	+	3/18/2002	OK	421v(20	FTSS	IF-205
0008	IF-205-180-MX	NEKXM1	Neck Moment X	Rt Ear	424.97280	N-m	-	3/18/2002	OK	421v(20	FTSS	IF-205
0009	IF-205-180-MY	NEKYM1	Neck Moment Y	Chin	425.08793	N-m		3/18/2002	OK	421v(20	FTSS	IF-205
0010	IF-205-180-MZ	NEKZM1	Neck Moment Z	Chn	425.91182	N-m	+	3/18/2002	OK	421v(20	FTSS	IF-205
0011	B02A25-N03	CSTXG1	Chest Accel X	Fwd	401.20046	g	+	8/5/2002	OK	421v(20	Entran	EGE-73B6Q-200
0012	02A18-N12	CSTYG1	Chest Accel Y	Lft	402.78171	g	-	8/5/2002	OK	421v(20	Entran	EGE-73B6Q-200
0013	B02A25-N10	CSTZG1	Chest Accel Z	Up	400.45363	g	-	8/5/2002	OK	421v(20	Entran	EGE-73B6Q-200
0014	14CB1-2897-135	CSTXD1	Chest Deflection X	Sturn	119.78779	mm	+	3/25/2002	OK	421v(20	Servo	14CB1-2897
0015	2430-739	LFMZF1	Left Femur Force Z S37	Knee	20067.530	N	+	3/18/2002	OK	421v(20	GSE	2430
0016	2430-760	RFMZF1	Right Femur Force Z VRTC 4	Knee	20036.559	N	+	3/18/2002	OK	421v(20	GSE	2430
0017	P17837	HEDXG2	Head Accel X	Rr	804.08323	g	-	11/6/2002	OK	426v	Endevco	7264C-2KLC-2-
0018	P17559	HEDYG2	Head Accel Y	Lft	806.90025	g	-	11/6/2002	OK	426v	Endevco	7264C-2KLC-2-
0019	P15856	HEDZG2	Head Accel Z	Up	791.05123	g	-	11/6/2002	OK	426v	Endevco	7264C-2KLC-2-
0020	IF-205-287-FX	NEKXF2	Neck Force X	Hd	13369.237	N	-	11/6/2002	OK	426v	FTSS	IF-205
0021	IF-205-287-FY	NEKYF2	Neck Force Y	Hd	13366.046	N	+	11/6/2002	OK	426v	FTSS	IF-205
0022	IF-205-287-FZ	NEKZF2	Neck Force Z	Hd	20078.327	N	+	11/6/2002	OK	426v	FTSS	IF-205
0023	IF-205-287-MX	NEKXM2	Neck Moment X	Rt Ear	425.62243	N-m	-	11/6/2002	OK	426v	FTSS	IF-205
0024	IF-205-287-MY	NEKYM2	Neck Moment Y	Chin	425.09715	N-m		11/6/2002	OK	426v	FTSS	IF-205
0025	IF-205-287-MZ	NEKZM2	Neck Moment Z	Chn	423.84105	N-m	+	11/6/2002	OK	426v	FTSS	IF-205
0026	P16194	CSTXG2	Chest Accel X	Fwd	400.57338	g		11/6/2002	OK	426v	Endevco	7264C-2KLC-2-
0027	P16517	CSTYG2	Chest Accel Y	Lft	399.70324	g	-	11/6/2002	OK	426v	Endevco	7264C-2KLC-2-
0028	P16428	CSTZG2	Chest Accel Z	Up	399.75346	g	-	11/6/2002	OK	426v	Endevco	7264C-2KLC-2-
0029	14CB1-2897-139	CSTXD2	Chest Deflection X	Sturn	118.96214	mm	+	11/13/2002	OK	426v	Servo	14CB1-2897
0030	2121-0257	LFMZF2	Left Femur Force Z #2	Knee	20029.759	N	+	11/6/2002	OK	426v	Denton	2121

Channel Report

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0031	2121-0258	RFMZF2	Right Femur Force Z /12	Knee	20026.718	N	1	11/6/2002	OK	426v	Denton	2121
0032	J31779	LSXXG	LEFT REAR SEAT	FWD	977.13653	g	1	10/28/2002	OK	-1	Endevco	7264-2000TZ

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Channel Report

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Name of Test 021114 System MINIDAU Name of DAU DAUB

Chan.#	Sensor #	Mnemonic	Description	Dir.	Range		Pol.	Cal.		Group	Mfg.	Model
0001	A8511	LSXYG	LEFT REAR SEAT	RT	1001.2515	g	+	6/19/2002	OK	-1	Endevco	7264-2000TZ
0002	J15067	RSXXG	RIGHT REAR SEAT	FWD	995.95393	g	+	11/5/2002	OK	-1	Endevco	7264-2000T
0003	J10454	RSXYG	RIGHT REAR SEAT	RT	1025.0045	g	+	11/5/2002	OK	-1	Endevco	7264-2000TZ
0004	J36226	TENXG	TOP OF ENGINE X-AXIS	FWD	1500.3551	g	−	9/10/2002	OK	-1	Endevco	7264-2000TZ
0005	ACCM9	BENXG	BOTTOM OF ENGINE X-AXIS	FWD	1498.1273	g	+	5/23/2002	OK	-1	Endevco	7264-2000TZ
0006	J11642	RFCXG	RIGHT FRONT BRAKE	FWD	1025.0045	g	+	11/5/2002	OK	-1	Endevco	7264-2000T
0007	J35701	LFCXG	LEFT FRONT BRAKE	RR	4013.7007	g	-	10/31/2002	OK	-1	Endevco	7264-2000TZ
0008	J41082	DPCXG	INSTRUMENT PANEL TOP	RR	1000.1562	g	-	10/30/2002	OK	-1	Endevco	7264-2000TZ
0009	A1598	RDKZG	REAR DECK Z-AXIS	UP	994.36783	g	-	11/5/2002	OK	-1	Endevco	7264-2000T

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Shunt Measurement after Test

Name of Test 021114

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			Shunt 1			Shunt 2 (-)			Shunt 3 (+) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
Name of	Name of	Channe	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Range
DAUA	EVENT	0001												
DAUA	02102116-A13	0002	3.000	3.167	Yes									
DAUA	02102116-A08	0003	3.000	3.165	Yes									
DAUA	02102116-A18	0004	3.000	3.170	Yes									
DAUA	IF-205-180-FX	0005	3.700	3.714	No									
DAUA	IF-205-180-FY	0006	3.700	3.710	No									
DAUA	IF-205-180-FZ	0007	3.700	3.679	No									
DAUA	IF-205-180-MX	0008	3.700	3.721	No									
DAUA	IF-205-180-MY	0009	3.700	3.710	No									
DAUA	IF-205-180-MZ	0010	3.700	3.667	No									
DAUA	B02A25-N03	0011	3.000	3.161	Yes									
DAUA	02A18-N12	0012	3.000	3.164	Yes									
DAUA	B02A25-N10	0013	3.000	3.168	Yes									
DAUA	14CB1-2897-1355	0014	5.000	5.365	Yes									
DAUA	2430-739	0015	3.700	3.735	No									
DAUA	2430-760	0016	3.700	3.719	No									
DAUA	P17837	0017	3.000	3.147	Yes									
DAUA	P17559	0018	3.000	3.166	Yes									
DAUA	P15856	0019	3.000	3.145	Yes									
DAUA	IF-205-287-FX	0020	3.700	3.707	No									
DAUA	IF-205-287-FY	0021	3.700	3.719	No									
DAUA	IF-205-287-FZ	0022	3.700	3.675	No									
DAUA	IF-205-287-MX	0023	3.700	3.712	No									
DAUA	IF-205-287-MY	0024	3.700	3.716	No									

			Shunt 1			Shunt 2 (-)			Shunt 3 (-) [K3600 only!]			Shunt 4 ( ) [K3600 only!]		
Name of	Name of	Channe	Referenc Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Range
DAUA	IF-205-287-MZ	0025	3.700	3.662	No									
DAUA	P16194	0026	3.000	3.154	Yes									
DAUA	P16517	0027	3.000	3.342	Yes									
DAUA	P16128	0028	3.000	3.145	Yes									
DAUA	14CB1-2897-1392	0029	5.000	3.173	Yes									
DAUA	2121-0257	0030	3.700	3.683	No									
DAUA	2121-0258	0031	3.700	3.695	No									
DAUA	J31779	0032	3.000	3.078	Yes									
DAUB	A85JJ	0001	3.000	2.782	Yes									
DAUB	J15067	0002	3.000	2.702	Yes									
DAUB	J10154	0003	3.000	2.688	Yes									
DAUB	J36226	0004	3.000	2.313	Yes									
DAUB	ACCM9	0005	3.000	2.410	Yes									
DAUB	J11642	0006	3.000	2.807	Yes									
DAUB	J35701	0007	3.000	2.750	Yes									
DAUB	J41082	0008	3.000	2.869	Yes									
DAUB	AJ598	0009	3.000	2.826	Yes									

Shunt Measurement before Test

Name of Test 021114

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			Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (+) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
DAU	Sensor	Channe	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value /	Out Rang	Reference Voltage /	Shunt Value / V	Out Rang	Reference Voltage /	Shunt Value / V	Out Range
DAUA	EVENT	0001												
DAUA	02102I16-A13	0002	3.000	3.169	Yes									
DAUA	02102I16-A08	0003	3.000	3.167	Yes									
DAUA	02I02I16-A18	0004	3.000	3.171	Yes									
DAUA	IF-205-180-FX	0005	3.700	3.714	No									
DAUA	IF-205-180-FY	0006	3.700	3.711	No									
DAUA	IF-205-180-FZ	0007	3.700	3.679	No									
DAUA	IF-205-180-M X	0008	3.700	3.721	No									
DAUA	IF-205-180-M Y	0009	3.700	3.710	No									
DAUA	IF-205-180-M Z	0010	3.700	3.667	No									
DAUA	B02A25-N03	0011	3.000	3.162	Yes									
DAUA	02A18-N12	0012	3.000	3.163	Yes									
DAUA	B02A25-N10	0013	3.000	3.166	Yes									
DAUA	14CB1-2897-1 355	0014	5.000	3.339	Yes									
DAUA	2430-739	0015	3.700	3.735	No									
DAUA	2430-760	0016	3.700	3.719	No									
DAUA	P17837	0017	3.000	3.148	Yes									
DAUA	P17559	0018	3.000	3.165	Yes									
DAUA	P15856	0019	3.000	3.145	Yes									
DAUA	IF-205-287-FX	0020	3.700	3.706	No									
DAUA	IF-205-287-FY	0021	3.700	3.719	No									
DAUA	IF-205-287-FZ	0022	3.700	3.674	No									
DAUA	IF-205-287-M X	0023	3.700	3.712	No									
DAUA	IF-205-287-M Y	0024	3.700	3.716	No									

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			Shunt 1 (+)			Shunt 2 (-)			Shunt 3 (-) [K3600 only!]			Shunt 4 (-) [K3600 only!]		
DAU	Sensor	Channe	Referenc Voltage /	Shunt Value /	Out Rang	Referenc Voltage /	Shunt Value /	Out Rang	Referenc Voltage /	Shunt Value / V	Out Rang	Referenc Voltage /	Shunt Value / V	Out Range
DAUA	IF-205-287-MZ	0025	3.700	3.662	No									
DAUA	P16194	0026	3.000	3.156	Yes									
DAUA	P16517	0027	3.000	3.143	Yes									
DAUA	P16428	0028	3.000	3.146	Yes									
DAUA	I4CB1-2897-1392	0029	5.000	3.168	Yes									
DAUA	2121-0257	0030	3.700	3.683	No									
DAUA	2121-0258	0031	3.700	3.695	No									
DAUA	J31779	0032	3.000	3.084	Yes									
DAUB	A85JJ	0001	3.000	2.787	Yes									
DAUB	J15067	0002	3.000	2.703	Yes									
DAUB	J10454	0003	3.000	2.690	Yes									
DAUB	J36226	0004	3.000	3.320	Yes									
DAUB	ACCM9	0005	3.000	2.414	Yes									
DAUB	J11642	0006	3.000	2.817	Yes									
DAUB	J35701	0007	3.000	2.754	Yes									
DAUB	J41082	0008	3.000	2.874	Yes									
DAUB	AJ598	0009	3.000	2.841	Yes									